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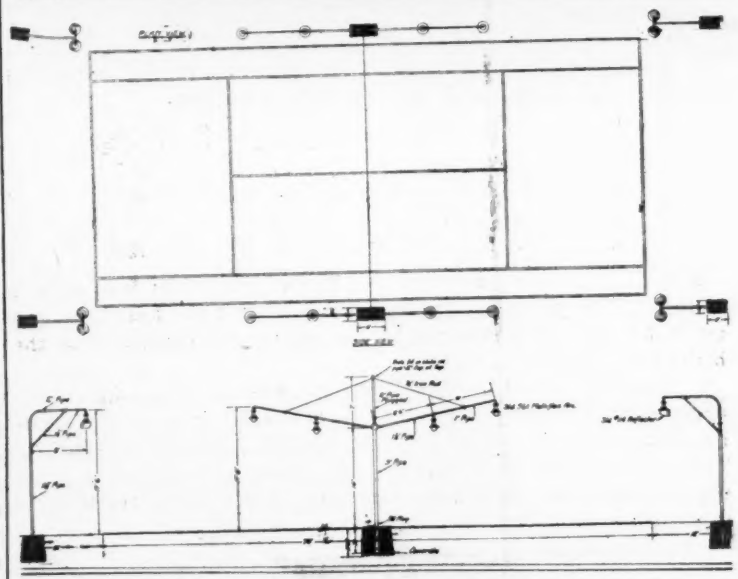

Diagram of Gas Piping for Night Tennis Illumination, Using Welsbach Multi-Flex Arcs.

Playing Tennis at Night by Gas Arcs.

[Communicated by MR. T. J. LITLE, JR.]

Experiments have been conducted over a period of several months to determine whether or not it would be practicable to play lawn tennis at night on courts illuminated by Multi-Flex Gas Arcs. These experiments have culminated in an installation by which four tennis courts are lighted at the Woodbury (N. J.) Country Club, the gas being supplied by the Public Service Gas Company.

The lighting of a single court would not be adequate for the Country Club, in that so few of the Club members could take advantage of the court during the evening, wherefore it might not be considered popular from the standpoint of the general membership. Consequently, where single courts have been lighted, it was found they were used but one evening a week for tournament playing. Where more than one court is lighted the illumination becomes decidedly more economical, for the light over one court contributes to the illumination of the adjoining courts. Where several courts are lighted the game becomes very popular.

The lighting of single private tennis courts, however, is perfectly feasible. It must be borne in mind that to produce the same illumination with any illuminant other than gas the cost would be several hundred per cent. greater; and, as a very high degree of illumination is requisite, this is a very important consideration.

It has been found at Woodbury that the courts were patronized an average of 3 hours an evening, with all courts filled, and a number on the waiting list. A number of players interviewed declared that they enjoyed night tennis immensely more than day tennis, for the reason that in the cool of the evening they did not become so easily

fatigued. From the social standpoint it can be considered an instant success to any club adopting it. A large number of automobiles are parked along the courts every night, the occupants of which interestedly watch the game. Tennis is becoming very popular in America; indeed its vogue is so great that it is difficult for the average business man to enjoy the game, even on Saturdays and holidays, the courts being in such great demand. It was with the idea of remedying this situation that night tennis was considered. The nominal charge of 10 cents per hour per player will more than take care of all expense incidental to the operation of the lamps. The cost of operating two courts for one night may be thus summed:

Gas at $1 per 1,000, 24 lamps (18 cubic feet per lamp), 3 hours per night	$1.29
Maintaining 24 lamps, at 50 cents each per month, $12 for 25 days	0.48
Total for two courts for one night	$1.77
Revenue from two courts for one night, 8 players, 3 hours, at 10 cents per hour	2.40

When the proposition for supplying gas for "night tennis service" was put up to the Public Service Gas Company, they agreed, without a moment's hesitation, to run over 200 feet of 3-inch main, realizing that here was a new use for gas which promises to be very popular before the end of the present season.

The night photograph shows the remarkably high and uniform illumination obtained by the use of Multi-Flex gas arc lamps. The taking of the picture required but 1½ minutes exposure on a very dark night, by the light of the lamps alone. The installation is designed to include standard material both in lamps and piping. Any pipe shop can turn out the work promptly. The installation shown in the photograph was made in 2 days, all the pipe being cut in the pipe shop, the poles being assembled and erected on the ground. It will be noted that, with the exception of the pole alongside the net posts, there are no poles near the side lines, the mast arms (extending far out from either side of the central poles) taking the place of objectionable side poles. Installations can be made by following the instructions in the diagram.

As shown, the poles are made up of standard pipe, embedded in concrete, each pole going 3 feet below the surface. The gas entered the pole 1 foot below the surface, leaving a 24-inch drip pot at the base of each pole. A plug outlet is located at the ground level so that a rubber hose may be inserted for pumping out the drips on each pole. The pipe line is, of course, dripped to the meter, which is located in the basement of the Club House about 100 feet from the court. These posts are painted white, to match the white-and-gold, 5 burner Welsbach Multi-Flex lamps, with which this installation is equipped. The lamps are all hung on ball joints, which insures their depending perfectly vertical, and which experience shows will absorb vibration.

It will be noted that 16 lamps are required to light a single court, but where the courts are immediately alongside of each other the number of lamps may be greatly reduced, as follows:

No. Courts.	No. Lamps.	Gas Consumption, Cu. Ft. per Hour.
1	16	288
2	24	432
3	32	576
4	40	720

In the installation illustrated only two courts out of four were to be lighted, but when the installation was made it was found that the entire 4 courts could be used, the center two, of course, being the better illuminated.

It must be apparent to anyone that night tennis by gas light is an extremely attractive proposition to the gas man. It brings gas lighting into prominence and as such is valuable publicity advertising. There are hundreds of "Country Clubs" located in or near the large cities and suburban towns, the managers of which will certainly be interested in night tennis.

Mr. A. E. Laferty has been appointed Commercial Manager at Elizabeth City, N. C., and Mr. George Wood goes to Henderson, N. C., in a similar capacity. Mr. George R. McKee is now connected with the Pittsburgh (Pa.) Company. It is noteworthy that these gentlemen were all, at one time or another, connected with the New Jersey Gas Company.

[Continued from page 172.]

PROCEEDINGS, ELEVENTH ANNUAL CONVENTION, WISCONSIN GAS ASSOCIATION.

Held in the Hotel Pfister, Milwaukee, Wis., May 15th and 16th, 1912.

First Day—Afternoon Session.

The President introduced Mr. C. H. Wiggers (Milwaukee, Wis.), who read the following paper on

SOME PHASES OF PRESENT-DAY GAS LIGHTING.

There has been quite a revolution in gas lighting appliances within the last few years, which came very timely, resulting in gas companies retaining their gas lighting business against the competition of electric lighting and gasoline systems. As competitors of modern gas lighting, the gasoline systems are no longer making any headway. In these days the public looks for convenience and efficiency at the least cost; this being the case, gas lighting leads by a good margin. It is true that the electric companies have a larger number of different sized units with which to compete against gas, but with the up-to-date gas appliances, such as the Junior-inverted and upright burners, the standard, single, inverted burners, and the 3, 4 and 5-mantle inverted arcs, gas companies are in position to give the consumer more light for the same money or equally as much light for less money.

It is important, then, that gas companies look carefully into the installation of lighting appliances, and the selection of the proper units to be used. Most gas companies have specially trained men to see that the proper installations of appliances are made. It is impossible to establish a set of rules that can be applied in all cases, even though the nature of the business might be the same. We have to consider the height, width and length of the space to be lighted, together with decorations, furnishings and locality; and last, but not least, the consumer himself. A certain consumer might be satisfied with an installation that another would not even consider. It is, therefore, essential that the solicitor or the illuminating engineer take these conditions into consideration when making a proposal as to the kind of appliances to be used.

One unit which gas companies could use to advantage is between the single inverted and the 3-mantle arc, either in the way of higher candle power single units, or a compact, 2-light fixture which would compare favorably in price and in proportion to the single unit. With our present available units we often find the single unit too small, and the 3-mantle one too large, both as to cost of installation and operation. No doubt, some of the lamp manufacturers are working on such a go between unit at the present time.

The arguments which our electric competitor uses against gas lighting, are the heat in warm weather, discoloration of the ceiling, and lack of convenience in lighting and extinguishing the same. In answer to such arguments, the gas man can bring out these facts: While it is true that a gas unit radiates about 3 times as much heat as an electric unit of equivalent candle power, it is only in warm weather that the heat might be objectionable; but, then, the lighting hours are very short, and the consumer usually has all his windows, doors and transoms open in order to get a circulation of fresh air. Gas naturally consumes oxygen, but it also helps ventilation, and fresh air is fresher when drawn in from the outside. The heated air travels along the ceiling, and with proper ventilation (which all places should have) it will escape through the nearest opening, practically without increasing the temperature in the room. Moreover, the heat from gas light is beneficial, if it compels the occupant of a room to ventilate it in order to get rid of the heat, whereas the poor ventilation might not be noticed but for the heat.

The discoloration of the ceiling, on account of using gas for lighting, depends a great deal on the height of the ceiling, the kind of units used, and the nature of the place. If a person wants to install an arc where the ceiling is low, no doubt it will discolor the ceiling very soon, especially if the ventillation is bad. A condition of this kind can be overcome by putting in a number of smaller units, properly distributed. The discoloration comes from the currents of hot air rising from a lamp, carrying with it the dust floating in the air, and depositing it against the ceiling. From a smaller lamp, the rush of hot air to the ceiling will not be so intense, and will be better diffused before reaching the ceiling. Let us concede the fact that gas will do more damage to a ceiling than electric light, and then consider the difference in the cost of operation.

For the sake of argument, let us say that a consumer's bill for electricity is $9 per month. Gas equivalent to the same amount of light, would cost $6 per month. (This proportion is a very conservative estimate.) There would then be a saving of $3 per month, or $36 per year, gas over electricity. Then we will say that, with electric light, the consumer will have to re-decorate once in 4 years, and if using gas, once in 3 years. If, for example, the cost of decorating is $50, the cost per year, when using electricity, would be $12.50; when using gas, the cost per year would be $16.66⅔, or an increase over the electric of $4.16⅔ per year. With a saving of $36 per year when using gas, this additional expense of $4.16⅔ will still leave a net saving of gas over electricity of $31.83⅓ per year.

The lighting and extinguishing of gas can be made quite as convenient as the electric. In the first place, the by-pass pilot light, enabling the lighting of a burner by a chain-pull, makes quite as convenient a lighting method in most cases as the wall push-button. We gas men fail at times to realize this to the full extent. There are a number of systems for lighting and extinguishing gas at a distance which are just as convenient as the electric. We have, for instance, the double-pipe pilot, the electric and pneumatic valve, and the individual by-pass system, all of which require pilot lights. The electric spark and glower system, which is being rapidly improved upon, will eliminate the pilot feature and be of great value to the gas lighting business. It is also a fact that it is no more trouble to go to the center of a room and pull the chain on a lamp, than it is to go across the room to push a button, and most times when one wants light, one is nearer to the lamp than to the button.

Gas companies should co-operate with architects and building contractors to see that all buildings, regardless of their description, are piped, and if the proposed building is to be a factory or store, and is to be wired for electric lighting, arrange the gas outlets so that they will not come together with the elcctric. With the openings so arranged, the consumer can use gas or electricity independently of each other. Combination fixtures are inefficient and impracticable in places of this kind. In places where gas and electric openings come together, and straight electric is installed first, we find it difficult to put in gas later on, on account of having to take down the electric fixture altogether, for which the consumer has paid and probably does not care to discard, or to extend the piping which being exposed is invariably objectionable to the consumer. When there are independent openings for gas and electricity the consumer can use either during certain months, and gas stands the best chance for 8 months of the longest lighting hours in the year.

It is very essential that gas companies keep in close touch with places in the course of construction, to see that they are properly piped. I would suggest that, if the architect or contractor is not inclined to install gas piping, the owner be approached on the subject, and urged to see that the piping is done. It would be advisable to have the gas company lay out the gas pipe and openings according to its judgment.

In reference to residences or small offices, the placing of the electric and gas outlets together would be more practicable, for in most cases combination fixtures can be used. However, if the consumer should insist on using a straight electric fixture in the center of the room, then we should try to get several gas bracket outlets in the room, placing the same about 6 feet from the floor, and plan to equip the burner with proper glassware, which can be selected to match the electric, and thus be made very decorative as well as serviceable. Bracket outlets should be installed in each room of a house, and, where ceilings are low, they will be found the most practicable, but should not be put on outer walls unless well protected from freezing. The number of outlets in each room would depend on the size and construction of the same; in a parlor or living-room having a fireplace, it would be well to place one gas opening at each side of the fireplace in a dining room, one on each side of the sideboard; in a kitchen, one over the sink and one over or near the gas range; in bedrooms, one on each side of the dresser, as well as one near the head of the bed (for those who like to read in bed); in the bath or toilet room, one on each side of the mirror (making it very serviceable for shaving). It would be better to have too many openings in a room rather than too few, and if one does not care to use all of them, they can be concealed with a picture or other decoration, being ready for use whenever occasion might demand it.

The rebuilding of old, upright gas fixtures, for use of inverted burners, has a large field and is often necessary to retain the lighting business in homes. A consumer who has a fairly good upright fixture, could have the same converted into an inverted one, by either removing the old arms and putting on the inverted arms, or have the old arms rebuilt, which is an easy and inexpensive job. Often it is necessary to shorten the stem on the fixture rebuilt, but that can easily be done on the premises. If a fixture is to be refinished when rebuilt, it should be brought to the shop, where necessary changes and the finishing can be done, a temporary fixture being hung in its place for the time being.

Carry a stock of about 6 different kinds of inverted arms, a sample of which can be carried by the solicitor or fitter, who will also have a catalogue showing a complete line of glassware. Changes of this kind have frequently resulted in avoiding the loss of a consumer who had concluded to change entirely to electric lighting.

As to the single, upright unit, I believe most gas men have lost sight of the fact that there is still a good field for the same, if the proper type of burner is used in the proper place. The upright, Junior burner can be used to advantage in many parts of the home. Take, for instance, a parlor in which there is an expensive, old-style, four-arm, upright fixture with cut glass globes and open-flame burners, which are giving unsatisfactory results as to light. The consumer would rather have the 4 open-flame burners replaced with Junior upright burners and retain its old appearance, than go to the expense of changing the same to inverted, especially when fixture is not in use very much. Then there are the brackets in bedrooms, bathrooms and pantries, where the Junior light can be used to advantage. Combination fixtures can be made very effective by means of an inverted or upright socket burner, using the same glassware as the electric. All residences being built should be solicited for at least one opening in each room, wired for electric control or ignition, so that distant gas lighting can be used with the same convenience as electric lighting. In connection herewith I might mention a new device which is about to be put on the market, known as the "Concealo" connection, which can be placed in the baseboard of a room for portable lamp connection with tubing. This appliance is very neat and compact, being about 2½ inches in diameter, and projecting about ¼ to ½ inch from the baseboard. It is so arranged that it is impossible to remove the tubing until the gas is shut off, making it absolutely safe. It will, no doubt, be of great value to the gas industry.

It may be well now to give the facts about a few typical installations that illustrate some of the things mentioned in this paper, and to speak about methods of pushing the lighting business. About 1½ years ago we were confronted with the proposition of lighting the offices of one of the largest wholesale houses in this city, then using two upright, incandescent burners, with 10-inch green shades over each desk. This style of lighting was very unsatisfactory, on account of the glare and shadows on the books, the heat given and the breaking of glassware and mantles by being moved to one side or the other. This concern had electric illuminating engineers figuring on the installation of an up-to-date electric lighting system. We also had permission to install several inverted arcs on trial, and, after some experiments, we were successful in installing a complete arc system for the whole office, which has been giving entire satisfaction ever since. The arcs were so arranged as to give an even distribution of light throughout the entire office, thereby eliminating shadows. The worst difficulty to overcome was the heat question. We solved this by installing a suction fan, which has taken care of it very nicely. Not only did it do away with the heat, but it greatly improved the air.

We have also been very successful in lighting one of the largest manufacturing plants in this city, using 178 arc lamps for general lighting. This particular plant had an electric system of its own, but the limited amount of boiler capacity made it possible for us to make this installation, which cost them a good deal less than it would to increase the capacity of their boiler as well as their dynamos.

These conditions exist in a great many of the plants throughout the city, but the fact is not generally known by the heads of the concerns, and it is, therefore, very essential that we do not overlook them when soliciting lighting business. Their attention should be called to such facts, as well as the cost of operating their own plant compared with that of using manufactured gas. It has been our experience that in most cases the heads of concerns are not aware of the actual cost of their own generated lighting. Plants that are growing rapidly are particularly apt to be caught short of power and should be watched closely.

We have also had some very gratifying results with the single, inverted unit for lighting individual machines, bowling alleys, billiard tables, stores with low ceilings, small show windows, in fact every place where a small unit might be practical.

We also conducted a campaign on the single inverted light, known as the No. 647 Reflex, for 5 months during the past winter, during which time we sold from 400 to 600 lamps per day, 90 per cent. of which were for home lighting. These lamps were sold at $2.25, complete, each light payable at the rate of 75 cents per month for 3 months, the charge appearing on the consumer's gas bill. The lights were guaranteed against breakage for 3 months. We employed from 30 to 40 men on a commission basis. Each man carried the lamps with him, making the installation and the charge when the sale was made. We also employed several inspectors to examine the lights and verify the sales. Commissions were paid twice a month, allowing 5 days to make up the pay roll. We have covered the city three times on this proposition, and in a great many cases sold additional lights where we had made previous sales.

This campaign brought out the fact that people living in new houses, not piped for gas in the general living rooms, were very much put out when they found they could not use this style of unit. Kitchens usually had gas, and many lamps were installed there. We have since then heard comments made by the tenants of these houses, to the effect that, should they ever move into another place, they would see to it that they could use gas for lighting in all the rooms, as they now had to go to the kitchen for light. This brings out very forcibly that houses in the course of construction should be watched closely, to see that gas piping is put into all the rooms.

Gas companies ought to work in conjunction with fixture dealers to help bring about the desired results. At present most fixture houses cater to the electric business, and I believe the time is near at hand when gas companies will be forced into the combination fixture business in order to protect their own interests.

Discussion.

The President—The paper is before you for discussion. We may all agree that the claim that gas companies are being crowded out of the lighting field by the electric interests is very fallacious, and I believe anyone who has control of a combined gas and electric company will agree therewith heartily.

Mr. Kellum—One point in the paper I am not quite clear on, is the statement that the men carry the lamps with them making the installation and the charge when the sale is made. I thought he was selling from the lighted lamp?

Mr. Wiggers—No; only when practical.

Mr. Kellum—Do I understand that you have been selling from a "dead" lamp? But when the solicitor approaches the house and knocks on the door, and the prospective customer comes out he is asked to buy the lamp? It seems to me that gives the solicitor a rather difficult proposition, one that could be very much improved, if he could get in the house to light the lamp before trying to effect a sale. A gas lamp "dead," or that is not lighted, has very little value. It is very difficult for a householder to figure upon a lamp unlighted being worth $2.25; but if that lamp is put in the place where it is to be used, and you burn off the mantle light and adjust the burner, it is quite a different proposition. Not only does this practice increase the possibilities for sales, but it facilitates the covering of ground by the salesmen as the sales are made quicker. I do not know the record in Milwaukee, but it is nothing unusual for a fairly good solicitor, selling from a lighted lamp, to sell 12, 15, 18 or 20 lamps a day. Such records have been made; but I do not know a single instance where made from a "dead" lamp. Usually the solicitor's call has been announced in advance by sending out attractive advertising material, usually about 1 or 2 days ahead of the time when he makes his call. This material is not sent out broadcast or at one time, but is sent out daily in each section in turn a day or two before the anticipated visit of the solicitors. These men carry with them some means of identification as an employee of the gas company, and when the householder comes to the door the solicitor simply introduces himself as coming from the gas company to demonstrate the new lamp, and asks where he can place it. Another advantage of selling from a lighted lamp is probably not 1 person out of 10 is familiar with the use and advantage of the pilot light, and you cannot demonstrate a pilot light with a "dead" lamp. After lighting and adjusting the light the solicitor operates the pilot light while making his selling talk. I am, of course, simply a clearing house for this information which comes to me from a number of gas men who have been successful in operating campaigns. I am told three features go to make these campaigns successful; one is the easy payment, no money-down, plan; another is selling from the lighted amp; the third is the guaranty. In connection with the guaranty it should be given, not for the purpose of relieving a customer of expense, but evidence that there is very little expense in the up keep of the lamp; otherwise the renewals could not be replaced without charge. Many people are prejudiced against mantle lights, thinking they are expensive to maintain; and if the guaranty feature is used as practical evidence that the expense is not great or is insignificant, it has great selling value. Under the present selling plan they have averaged in Chicago almost 1 light per meter. They have sold nearly 500,000 lamps, and other gas companies have had proportionately good success.

Mr. Wiggers—I might say, in connection with the inquiries of Mr. Kellum, to explain our position more plainly, our men carry 10 to 12 lights right with them, carrying one light open (that is not in the cartoon) and try to get an audience with whoever is at the house. Once in the house they try to put the lamp on the fixture to demonstrate it as best they can at that time. They light it up to show its operations.

Mr. Kellum—You do light the lamp?

Mr. Wiggers—Yes; put in the lamp and leave it there. I do not mean they bring a sample lamp, take orders and afterwards fill them. They make the installation at the time of sale, getting a signed order for the same, leaving the original with the consumer or turning the duplicate copy into the office, which serves as our petty ledger charge.

Mr. Kellum—Then you light the lamp before effecting the sale.

Mr. Wiggins—Yes; practically in each case.

Mr. Kellum—That is what I had in mind, but it did not seem to me the paper put it that way. Suppose you put up the lamp, and for some reason the solicitor cannot effect a sale. What then do you do?

Mr. Wiggers—Take it off.

Mr. Kellum—Wouldn't it be better for the solicitor to take the position that the mantle is gone anyway, and that, consequently, he will, if agreeable, leave the lamp until next morning? You lose nothing by this, and you have the opportunity of demonstrating the lamp under the most effective conditions possible in actual service that night. It has been found, where the light has been left over night, that less than 3 per cent. come down the next day, and these were sales that would not have been made otherwise.

Mr. Wiggers—We practically do that, unless they absolutely refuse. You cannot show much of the lighting qualities during the daytime; it is merely to show the appearance of the lamp on the fixture with the operation of the same. If anyone doubts as to the efficiency of the light it is left over night.

Mr. Kellum—You leave it over night if you cannot effect the sales?

Mr. Wiggers—Yes; in a great many cases, on the chance of a sale, the light would be left over night.

Mr. Kellum—And you found that increased your sales?

Mr. Wiggers—That has been our experience, and we have been doing that right along.

Mr. Walker—Gentlemen, we have an invitation from the Builders' Permanent Exhibit Rooms, at 456 Broadway; and if you wish to visit the rooms they will be glad to show you what they have there. We have a small exhibit there ourselves. Because of this paper read here some gentleman might be interested in seeing two or three of the systems of long-distance lighting as shown there. You can also see this new fitting called the "Concealo." There are two of these over there also. The arrangement referred to in the paper is also on view.

Mr. Butterworth—As to leaving those lights over night or until your prospect has an opportunity to realize the situation. The ratio is mentioned as being 1 in 10 as to who really knows what that light is worth, if one's attention is not called to it. I have had practically like results, but from a different viewpoint. Every time we sell a gas stove we give the purchaser a light; this is included in the price of the stove, no matter what system of lighting is used. Our practice in doing so is to treat everybody alike. Our theory, of course, is to sell light; and in small country towns we have great lack of information to contend with. Accordingly we inaugurated a campaign of education. A man goes to every consumer and prospect each month, puts all appliances in good shape and only charges for material; anything worth having is worth paying for, and if you give something for nothing the receiver does not appreciate it. The labor service we furnish gratis, but we charge for the material. We instruct our men to be very liberal. We send the light with the stove on the theory that it is going in the kitchen; but about 50 per cent. of the women, being attracted by the light, want it in their sitting or dining room, or perhaps in their dressing room. We, of course, put it anywhere they want it placed, giving them the light they want. It is our one best step in getting lighting; and we have

been very successful in following that plan. We also have follow-up orders. In a number of cases we fitted up a whole house just from that single light, and it is usually true if they see the efficiency of that light one night, comparing it with the light they were in the habit of using, they prefer the new one. Afterwards they are always our friends and boosters.

The President—As an advertising scheme it is a good one. I also heartily concur in the theory that the maintenance of gas lighting devices, fixtures, etc., should be done by the company, and the only charge made should be for material used.

Mr. Butterworth—I have demonstrated to my satisfaction it was a mistake to allow anyone to have any material without paying the fixed price.

The President—I agree with you on that.

Mr. Butterworth—Give them the labor; do all you can to please them. I cannot say we have a customer with a complaint to make. Of course, ours is a small town, and our man knows everybody. Going to their places of business he adjusts lamps, puts in material, sends the bill, which they pay; and thank us, too. We have more complaints because we did not put on enough material than otherwise. They want good service and are pleased with it.

Mr. Kellum—Do you think that kind of service works against your customer using high grade material? The great objection to a "call service," I should think, would be the natural disposition of a customer to try and save money by buying cheap and inferior goods from a dealer instead of sending to the gas company and paying a higher price for the better grade of goods. Another objection, I should think, would be your being out of touch with your customer, making it possible for him to change to electricity without your knowledge, which would not be the case on straight maintenance with a rate say of 10 cents a month, providing for one regular call per month, with the privilege in the interval of sending to you for a mantle or chimney. A call service would be all right if the people availed themselves of it, but it seems to me the tendency would be to buy cheap stuff outside.

The President—With the fellow who buys cheap stuff you do not have to bother long. He soon discovers his mistake. The question of maintenance concerns each individual. We have never maintained a maintenance service, not having found it necessary to do so. We go on the theory that the best mantle we could buy was poor enough, without buying anything any worse. [Laughter.]

Mr. Kellum—Have you finished? [Great laughter.]

The President—Yes.

Mr. Kellum—All mantles are necessarily fragile, and the value of the better grades lies in their high, sustained candle power during their life—unfortunately many mantle users do not recognize this and buy them at the lowest possible price, irrespective of quality. They buy a 5 or 10-cent mantle if they can get it; and your contention, Mr. President, that, after he gets poor service, he comes to the conclusion he might better buy better goods, does not always work out, for in many instances where they get poor service they damn the gas. It may be all right, of course, if a company is both gas and electric, for in that case the customer would be played both ends to the middle. [Laughter.]

The President—It is a matter of education. If the difficulties spoken of occur it is because the gas manager or his subordinates were asleep on the job. That you must educate the people may not hold good in Milwaukee, but it does in Waukesha. We keep in touch with everybody in the town, and one complaint of poor service we get to pretty quick. While it is true we run both gas and electricity, we fight as hard for one as the other.

Mr. Gregg—I do not think our President's remarks should be considered at all. He is biased. He has them out there where they cannot get away. [Laughter.] We have to give them good stuff.

The President—So do we.

Mr. Kelsey—Is it not more difficult to work out domestic maintenance service than commercial, for the reason that, in business districts, where one maintains arcs and small units, one is dead sure to find the man in his place of business. In residence districts, however, has it not been found that maintenance cost has gone up high because people are away from home so often when the burner man calls?

Mr. Kellum—I have not been given to understand that maintenance cost runs up high because people are away at the time the trimmer calls. We all recognize that one of the most difficult customers to get at is the householder. You can get at the commercial business man because he is in business to make money, and if you have a proposition to save him money it is part of his job to listen to you. With the householder it is different. Any scheme that puts you in close touch with your residence customers—particularly a scheme that should stand for good service—is of greater value to the company. It has been found the guaranty that has been put on campaign lights, has opened up a way for a maintenance system in dwellings that had previously been impossible to secure. At the expiration of the guaranty the gas company representative calls and serves formal notice that the guaranty on the light (or lights) has expired and that the company will continue to maintain lights for a nominal fee of 10 cents a month. The termination of the guaranty is used to run in a maintenance contract, and this practice has resulted in the securing of a large number of these guaranty lights on a straight maintenance proposition, and the guaranty has been found an opening wedge to get that business.

Mr. Wiggers—An objection to domestic maintenance is to get into the homes. We find many people not at home. At least 25 per cent. of the calls we make we find people are not in; at least, they do not answer the call. A further objection often found, when you get into a house where a lamp is to be repaired or looked after is in a room you cannot enter, which means another call. Have a regular maintenance with route laid out, a man going over it. When he cannot, the same must pass it up or travel over it again. In course of time, I think, you would find it a pretty expensive maintenance proposition.

The President—Having reached the hour for adjournment, let me simply state our picture friend is still with us. [Laughter.] Having missed us at noon he would like to have us adjourn from here to the east front of the hotel where he will be ready for us. [Adjourned, to 10 A.M., the following day.]

SECOND DAY—MORNING SESSION.

The President called the meeting to order at 10 A.M., and said: The first matter will be a

SUPPLEMENTAL REPORT FROM THE EXECUTIVE COMMITTEE.

This was read by the Secretary as follows:

MILWAUKEE, WIS., May 16, 1912.

To the Wisconsin Gas Association: We respectfully submit herewith supplemental report on membership applications received since yesterday's session, and recommend the names be placed on the rolls:

Active.

Dequine, L. E., Madison. Way, S. B., Milwaukee.

Associate.

Franklin, W. R., Chicago, Ills. McMahon, J. P., Milwaukee.

Respectfully submitted,

H. M. BUCK,
J. H. WALKER,
W. H. WINSLOW, } Executive Committee.

On motion of Mr. Corscot (seconded) the report was accepted, and the names reported were ordered placed on the rolls, through an instruction to the Secretary to cast the ballot in favor of their election.

Mr. John Corscot (the Committee having so ordered) presented the following

REPORT OF NOMINATING COMMITTEE.

The Committee recommends the election of the following gentlemen as office bearers for 1912-13:

For President—Mr. J. F. Wortendyke, Janesville.
" *Vice-President*—Mr. D. G. McMillan, LaCrosse.
" *Secretary and Treasurer*—Mr. Henry Harman, Milwaukee.

B. B. LYONS,
JOHN CORSCOT,
W. JONES, } Committee.

The President—Gentlemen, you have heard the report of your Nominating Committee. What is your pleasure? A motion to adopt this report is in order.

On motion (seconded) the report was accepted, and the Secretary was instructed to cast a ballot favoring the election of the gentlemen named. The Secretary in due time reported that the instruction had been carried out.

AFFILIATION REPRESENTATIVE.

Mr. Corscot—Understanding that the term of Mr. S. J. Glass (Milwaukee) as representative of this Association to the American Gas Institute terminates on the 1st of November, and that a successor should be elected for the term of 2 years, beginning 1st November, 1912, and inasmuch as Mr. Glass has filled the office to the satisfaction of the Association, and has learned "the hang of the barn," I

move he be declared the nominee of this convention for the ensuing term, beginning November 1st next. [Seconded and adopted.]

The President—There being no other detail work for the morning, I will ask Mr. W. M. Blinks (Kalamazoo) for his paper on

THE RENTAL OF GAS ARC LAMPS AS A BUSINESS PROPOSITION.

Mr. Blinks not being present, Mr. Wallace read the paper as follows:

It is a matter for congratulation, and proof of the good business judgment of the fraternity, that gas men, with but very few exceptions, agree that the gas company itself is the proper source of distribution of the gas arc lamp. This is right in line with the more modern conception of selling service as distinguished from the old idea of delivering gas as the finished article, to be used by the customer to his own best ability, which was not usually creditable to the commodity supplied. The consumer puts in a gas arc lamp because he wants light, and has been told that this is the source of the best light for the least operating cost. As long as it gives good results it is nothing to him but a part of his business equipment; when it fails he suddenly calls to mind that it is a gas lamp, and the gas company is sure to bear the burden of his disappointment and resentment no matter how guiltless of any connection with the lamp in disrepute or the things that make it unsatisfactory.

There being nothing truer in the whole range of a gas management's experience than that it will be held accountable for any failure in the operation of a gas arc lamp, it became its duty to itself to insure good results which involved the establishment of a lamp department as an important branch of the commercial work.

We, therefore, approach the subject to-day with the gas company already in the lamp business; but debating as to which method will give better results—the outright sale by the gas company of arc lamps, or the installation of the lamps on some other plan, with the ownership remaining with the gas company.

The interested observer will be convinced that there are strong reasons favoring either view of the proposition just stated. It would be most presumptuous and out-of-place for one to declare on the floor of an Association meeting in Milwaukee that the methods pursued in obtaining the magnificent lighting results nightly demonstrated in this city are to be condemned. Especially would it seem strange in one coming across the Lake, from Michigan where Grand Rapids and Detroit stand pre-eminent throughout the country amongst cities of their respective classes as leaders in gas arc lighting progress and accomplishment, the plan of selling outright being followed and advocated in these cities. Examples of conspicuous success of this method may be found in many other places, the three mentioned being simply picked out because well known to you all.

Prominent in the list of leaders in gas arc work, under the rental plan among our nearer neighbors, are the companies in Chicago, St. Louis, Cleveland, Pittsburgh, Toronto. In each of these there are skilled commercial staffs competent to make a success under any plan of operation. The question of method with these companies has, therefore, been decided on other reasons than that of the easiest way, which is sometimes suggested by the sales' advocate as the real basis for rental service.

The common platform upon which all stand without dissent is that the gas arc lamp is a good thing for the company, and that the users of well cared for gas arcs are getting the best light obtainable for the least money. Leaving out of consideration the exceptional organization, whose leadership and prestige might well accomplish anything, let us take up the broad inquiry as to the more workable plan to follow generally where these advantages do not exist. Take a gas company force as we find it ordinarily, gas consumers of a strenuous "show me" kind, gas at usual prices, and severe electrical competition, it is my belief, founded on long observation, that results of a more satisfactory nature, both in volume of gas sold and rapidity with which the business is built up, come from the rental plan, which saves the consumer the outlay otherwise required for fitting up his establishment.

It is probably safe to say that 90 per cent. of the gas arc prospects prefer a plan which does not tie up their capital in lamps. The ordinary merchant makes his living by turning over constantly a limited amount of money. Most of them could use more money to advantage if they had it, but as they cannot borrow money as easily as the public utility companies, what they do get is on short time and higher interest rate. Investment in equipment, which adds to the overhead charge, therefore, is regarded from an entirely different standpoint than that of the company with ample resources, which thinks nothing of discarding thousands of dollars' worth of apparatus if that which replaces it shows a better rate of saving than the interest on the money involved.

Granting that the user will prefer to get his lamps without initial expense, let us see whether the gas company is justified in supplying the demand in following a line of strictly good business policy for itself. As the average consumer cannot care for an arc lamp himself, regular maintenance service is necessary. The rental plan secures company maintenance all the time, preventing improperly kept lamps from remaining in use to the dissatisfaction of the consumer and a serious detriment to new business. The offer to rent proves complete confidence of the gas company in its lighting apparatus; unusual zeal on the part of the sales force breeds fear that the sale of the lamp itself is the main object in view, and naturally causes the possible purchaser to hesitate and perhaps put off giving the order for months at a time.

Investment in a lamp is not conducive to continued use, as many of the supporters of the sale plan have contended. On the contrary it makes the purchaser master of the situation; he may use electricity or gasoline and still have the gas arc lamp in reserve for emergency. The rental plan forces use of the lamp under penalty of removal if allowed to remain hanging dark.

While all commercial gas men agree as to the necessity for regular maintenance to insure satisfactory gas arc lamp service, it is nevertheless a fact that when the lamps have been sold the question of maintenance is one that is entirely up to the user. It often requires as much effort on the part of a solicitor to renew maintenance contracts from year to year as it does to get entirely new business where the gas company supplies the lamps itself. I believe that it is customary in many places to give a solicitor as much credit for the renewal of a maintenance contract as for new lamps secured, and yet very few companies that have sold their lamps can show 80 per cent. on regular maintenance. With capable inspectors and lamp trimmers visiting the consumer's place of business at intervals of a week or 10 days, the first symptoms of any possible dissatisfaction may be detected, and a timely warning sent in to the office, so that careful investigation may immediately be made, and any source of discontent be promptly removed. Where the lamp is owned by the consumer and not on maintenance, there is every possibility that it will be neglected, the wide-awake electric solicitor will note its inefficient operation and have switched the business to his company before the gas management suspects there is anything wrong, the meter reader being the first one to note the situation, and when his report "no gas used" goes into the offce the time for the commercial force to get in its work has passed usually until months of lost gas consumption have elapsed.

With privately owned lamps maintained by the gas company there is less incentive on the part of a maintenance department that is inclined to be slack to keep everything up to the highest standard. Such service is usually given at a lower rate than under the combined rental maintenance plan, therefore, the consumer is not so likely to complain as when he is paying the higher rate. The consumer paying for service and having no investment in the equipment is going to get results or throw out the lamps. This may look like an admission that the business is not so securely held as if the lamps were the property of the user. I maintain, though, that any gas service which is held from any cause, other than that of actual value given to and satisfaction enjoyed by the consumer, is not built upon a permanent and profitable basis.

The rental plan gives possession of the field and makes the gas company's lamp the standard for that city. It keeps out cheap, shoddy lamps, because no one will start a rental business with lamps of this description, and the peddlers who jump into a town for a brief campaign with a cut price lighting apparatus receive little or no encouragement from business people who can secure much better equipment without any initial investment. In amount of business secured during a given time the rental plan will develop double the amount of gas consumption that is obtainable when outright sales are insisted upon. Gas sales being the real thing looked for in any commercial department's work, the system that will get the largest output developed in the shortest time certainly should be favorably regarded.

It is possible, except in cases of very severe electric competition where there would be absolutely no chance of selling any lamps whatever, to place a price on the rental maintenance service that will take care of the operating expense, a reasonable depreciation and interest charge on the investment. It is doubtful whether any gas

companies consider it good policy to sell arc lamps at a price high enough to yield a real profit when all proper sales charges have been figured against the business. The proposition now seems to be narrowed to the question whether the gas company itself has sufficient confidence in the permanence of the business, and of a particular type of lamp, to make the preliminary investment after it has been figured out that this investment may be wiped off the books in 2 or 3 years' time. The electric companies assume risks of this kind without the slightest hesitation. Probably all of you can recall not one but several almost complete changes in equipment made by the central stations during the last dozen years. It is this willingness to keep right up to the very latest improvements that has placed electric lighting where it is. At the risk of being caught in a repetition of a statement which has been made more than once since the introduction of the inverted arc, the unreasonable fear with which many gas men regard a lot of upright lamps in the stock room, has held back the progress of gas arc lamps more than all the improvements in electric lamps, great as they have been.

It will be admitted that those companies which sold lamps outright did enjoy a temporary advantage when the inverted type first appeared on the market. They ran no risk of facing the return of hundreds of upright lamps by the introduction of the more improved type, and naturally began the use of the newer lamps somewhat in advance of those operating the rental system. The bolder ones amongst the rental companies soon found that a higher charge for the inverted arcs would furnish sufficient protection to the uprights in service. They have been free to safeguard their choicer business by the substitution of more modern lamps, and here again are found dominating the situation instead of being forced to go out with carefully prepared explanations to their customers that a better gas lamp had been developed and, therefore, the people who had made purchases a few years ago of the upright arcs should discard these and buy new equipment. Facing the additional investment those consumers who had been hearing wonderful tales of the tungsten lamp no longer regarded the wiring contractors estimate in the same way they had formerly, and many decided to make a trial of the new electric system. As between allowing an obsolete lamp to remain hanging in a business house, and to have the same lamp hanging back out of sight in the storeroom of a gas company, I can see but one side to the question. An uncared-for, dirty and generally disreputable gas arc lamp, hanging inside or outside of a store, will do more harm to the commercial gas lighting business than can possibly result from several times as many lamps which have been retired from use by reason of the substitution of improved gas equipment; and I do not know of any city operating under the sales' plan where this does not occur to a greater or less extent. So detrimental to business are such installations regarded by many progressive gas men that the old lamps are bought back at a price higher than what the book value of rented lamps would average if forced out of use by improvements after only a year or two of service.

The foregoing is a somewhat condensed synopsis of the arguments which prompted the adoption of the rental plan to the large extent that it is followed. That experience has proven the reasoning to be sound is most convincingly shown by the fact that not one progressive gas company that has ever adopted the rental plan has changed over from it, while many companies have found it desirable to change their policy from sales to rental. There are to day enough companies furnishing service absolutely without any charge to prompt an inquiry as to whether in a few years such a plan may not be much more generally followed. The popular demand for lower priced gas, and the legislation which is constantly being urged to this end however lead me to believe that it will be wise for managements to preserve a distinct separation between their charges for gas which they cannot always control and their prices for service about which there is likely to be little contention. With the lower prices for gas in effect, increased output becomes absolutely necessary, if the earning power of the company is to be maintained without loss. No one questions the assertion that commercial gas arc lighting is the cream of the gas company's business. It is obtainable in the greatest extent without additional investment for mains, services or meters and, barring the few exceptional organizations which we have said before might be counted upon to carry any plan through to successful outcome, the rental system of placing gas arc lamps seems to me to have developed the greatest amount of gas sales in the past and to promise even greater possibilities for the future, now that electrical competition is more severe than formerly.

Mr. George W. Thompson, Commercial Director of the American Gas Company's group of plants, read a paper at the Company's annual meeting (1910) on "Rental *vs.* Sale of Gas Arcs," which so exhaustively deals with the subject from the practical standpoint of a gas man that detailed examples proving many of the points I have taken up would be a repetition of his work. Should any here not be familiar with that paper I can furnish a copy of it, which is worthy a place in the files of any gas company. It has impressed on me that one term made use of by Mr. Thompson is particularly expressive, and with your permission I will quote his entire paragraph on:

"*Lost Motion by Selling Lamps.*—A gas company is not in the lamp business for the sake of dealing in merchandise or the profit from it, but for the sake of selling gas. What great advantage is there for a gas company to sell, say 1,000 lamps, unless it has some system whereby those lamps are looked after and maintained, and it knows that every lamp placed is a gas consumer, and this after considerable length of time. It is hardly worth while to exert the energy to sell a lamp to be used 1, 2 or 6 months and then have it discarded for some other fixture, as is often the case; but when lamps are rented you make a record of them the same as you do of your meters. You visit them every week or 10 days and know that they are consuming gas, and in cases where the consumer is dissatisfied in any way you get a check on him through your lamp trimmers, to whom he will usually complain, and in the event that he does stop using those lamps and put in some other system, you then remove the lamps, put them back in stock and install them again somewhere else, so that you have the satisfaction of knowing that every lamp that you have purchased is to a large extent a constant gas consumer, and you do not have to purchase more lamps until every lamp in town is working. If by the sale system you sell 1,000 lamps, at the end of a year there might not be more than half this number in use; the other half are idle, taken down and discarded, or laid away. You have no lamp trimmers going there to trim the lamps, consequently no check on them, and if you get further demands for lamps elsewhere you are constantly buying new ones and reselling them again, so by such means the gas company simply becomes a selling agent for the lamp manufacturer and is losing sight of the important thing, 'The Sale of Gas.'"

The liability of lost motion as just explained certainly seeme one of the weakest features of the sale plan. Mechanical engineers avoid lost motion; let us as business engineers be equally careful in doing the same.

Mr. Norton H. Humphrys, whom you all know as the AMERICAN GAS LIGHT JOURNAL'S regular contributor on English gas affairs, is one of the keenest observers in the entire gas world. About a year ago he took up in one of his letters the subject of lamp rental, and his clean-cut, incisive statement of opinion will serve to close this paper more fittingly than anything else I could pen:

"The only really satisfactory plan, in our experience, is for the gas company to provide the lamps at a moderate annual charge, to include maintenance, and to retain the entire control. It means some outlay of capital, some care to avoid accumulating half-used and valueless stock and some continual expense; but the result is well worth while. I know of no town where this department has been properly attended to, and where at the same time the general sales of gas are unsatisfactory or show a falling. Gas engineers frequently say that there is nothing like selling right out. It keeps down capital outlay, and the consumer is more likely to continue to use the lamps. This is quite right. He does continue to use them—till they fall to pieces. All is well so long as the lamps are new, but when they begin to wear there is trouble. He expects them to be kept in efficient order long after they ought to have them scrapped, and a number of lamps in bad condition will spoil the whole show. This objection applies equally, whether the purchase is for cash-on-the-nail, or by instalments. I have also met with the objection that with plain hiring the consumer is apt to want to change at frequent intervals and to have the latest improvements. This matter cuts both ways. It involves additional expense and perhaps a larger scrap heap. But it is not to the interests of the gas industry if a lot of old fashioned, inferior lamps are maintained in use, especially in the face of competition. The money spent in providing the latest and best is not altogether money wasted. There is always the difficulty about undertaking the maintenance of lamps or anything else that belongs to the consumer, that he objects to the cost of a second new lot when the first is worn out. With plain hiring no disputes need arise, and there is nothing

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NEW YORK, MONDAY, SEPTEMBER 16, 1912.

OBITUARY.—MR. FREDERICK JOHN MAYER.

Possibly for a year or more the intimates of that great constructing gas engineer, trustworthy friend and best of associates, knew that Mr. Frederick John Mayer, was suffering from an affliction, the insidious advances of which were being met by the resistance afforded through a strong will abetted by a lion's heart. But the foe would not be denied. The malady (cancer of the stomach) that beset him had late this summer progressed to the point where it was found necessary again to resort to the surgeon's aid, and an operation, the last week in August, which was seemingly successful, failed of its purpose, and death ensued the morning of the first inst. Mr. Frederick John Mayer, whose world-wide fame as a gas engineer is known to all the American fraternity, was born in Bremerhaven, Germany, July 4, 1853. His main tuition was gained in the famous University of Stuttgart, Germany, where he absorbed the principles and method of engineering. Towards the close of 1870, after serving his country during the Franco-Prussian war, he came to America and accepted a position on the drafting force of a firm that was rapidly coming into prominence as contractors of gas works' apparatus, the concern then being known as Bartlett and Hayward, with headquarters then as now in Baltimore, Md. Through changes in the personnel of that corporation, backed up by studiousness and close attention to his duties, Mr. Mayer progressed rapidly. To the elder Mr. Bartlett, backed later by the hands of that prince of men, the late Mr. Hayward, deceased advanced to the position of Assistant Engineer, until (in 1892, we believe) he was appointed Engineer-in-Chief, remaining as such when the corporation entitled the Bartlett-Hayward Company was formed. In 1906 he resigned from that service to represent (with the title of General Manager) in this country, the great German corporation known as the Didier-March Company, perhaps the most important clay products manufacturing concern in the world, from which position death removed him.

Between his first service in Baltimore, to his connection with the Didier-March Company, his record teems with activity. The Bartlett-Hayward Company absolutely grew and flourished like the proverbial bay tree, until came the time when no contract along gas lines was too large for it. Every State knew its activity; almost every city knew through his structures the cleverness of its Chief Engineer. The Patent Office holds records of patents issued to him for protection on dozens of important matters connected with processes and apparatuses for making and distributing gas, several of which are in general use. Especially does this apply to furnace construction, for in sensible methods of directing and controlling heats and their application he was a master. In the limits of this short history it is impossible to more than skim the surface of his active, useful career. But prominently in connection with the closing years thereof may be noted these examples of modern construction: The inclined installation on the great Astoria plant of the Consolidated Gas Company, of this city; the vertical retort installation in the works of the Providence (R. I.) Company; and the mammoth 15-million capacity gasholder, also on the works of the Consolidated. These three examples show his versatility. Of course, he worked in collaboration with the Consolidated and Providence engineering staffs on these tasks; but on him rested the greatest share of responsibility. He was a believer in Association work, and contributed his thought and presence to many of these meetings. He was elected to membership in the American Gas Light Association at its 12th meeting (1884), and at its 16th meeting (1888) contributed a paper on the "Construction of Gasholders with Wrought Iron or Steel Tanks above Ground." This subject was then a much mooted one, and his position thereon has certainly been well-proved by the lapse of time. When the American Gas Institute was formed, he went in as a charter member, and a notable contribution to its records is in the shape of his part in the discussion on the Fulweiler paper ("Physical Theory of Coal Carbonization") read before the Institute, New York (1908) meeting. This scant account must do for his practical connection with the industry. Besides his membership in the Institute, he was also prominent in the doings of the American Society Mechanical Engineers, the American Society Civil Engineers, of the Illuminating Engineering Society, the American Peat Society, of the Chemists Club, and many other technical organizations. From the social side his life was an eminently happy one. Although death took from them at an early age a child in whom naturally much store was set, his wife and himself led what was truly a most harmonious and synchronous life, Their friends were legion, and their home was the house of their friends; especially so in the days when Baltimore was their residing place. Being an excellent musician, he was a prominent factor in the Liederkranz and also of the local Verein, and counted amongst his intimates many musicians and singers whose fame is world-known. He was, through all his career, a great stickler for detail, much of which could have been avoided; but his thoroughness would not brook even the suggestion of a chance. Possibly a trifle quick in his personal way, no kinder heart ever throbbed; no more forgiving person ever lived; and his charities (to the knowledge of the writer) were many and of a nature that brooked no publishing. So these things will always remain mute but positive testifiers to his worth. The funeral services were held in his late home (the Manhassetts Apartments) in New York city, the evening of September 4th, and his remains were returned to earth the following day in Baltimore, which city had been his home for two score years.—C.

BRIEFLY TOLD.

THE CLOSING TIMES OF THE CANADIAN-MICHIGAN ASSOCIATION MEETING.—Our account last week of this joint meeting ended with the close of the technical sessions (Sept. 3) of the Canadian Association. Promptly at 10:30 A.M. of the 4th the Canadian contingent journeyed to the Bay Street Wharf, where "aboard the steamer Rochester, alongside," the Michigan men informally welcomed their Canadian confreres. The reception over, the joint party went on the tracks (quite nearby) of the Canada Pacific Railway, there to board a special train in waiting to carry the party to the magnificent plant, Station B, of the Consumers Gas Company, only recently completed. The visitors were heartily received by the Hon. A. W. Austin, the President of the Company, General Manager Arthur Hewitt, Superintendent Jefferis, Office Manager John J. Armstrong and several of the staff. The plant was duly inspected, and its condition surely reflected the greatest credit on the attention given to it by the "Super.," who really regards it as a proud father would regard a bouncing son. The welcoming speeches, by Mr. Austin and Mr. Hewitt, were of the sort that put all at their ease. The inspection concluded, the private train was again boarded and a brief ride over and through some really beautiful country brought the party to the beautiful grounds and ornate home of the Lambton Golf and Country Club, of which organization the Hon. Austin is perhaps the sponsor and director. The grounds and club house are really beautiful, and they were viewed at their best through the mellow, hazy light of a September day—albeit the temperature was a trifle high. Here the party also shared in a luncheon, notable for the elegance of its menu and for the nicety with which it was served. Mr. Hewitt acted as toastmaster (and a capable director along such lines he is), flanked by the Hon. Austin and President Blowers, of the Michigan Association. 'Tis too late now to attempt to repeat the "Transactions" in the instance of the speechmaking; so suffice it to say that the talks were pithy and pointed. Luncheon at an end, the train was again boarded for Toronto and the Exhibition grounds, which were reached by 4:20 P.M. Here the party separated, each going to the points that fancy decided. This annual exhibition is undoubtedly one of the finest given anywhere in any country. It lasts 12 days, and during that period this year well over one million inspected its many marvels. Those who are unaware of, or only dimly perceive, the greatness of Canada and her people, did they visit this annual gathering, would have a better appreciation thereof. One excellent feature this year of the show was the exhibition of gas appliances. This was carried on in a building (or booth) especially erected for it; and it was really creditable to all concerned. Many manufacturers resident in the States contributed to its success, especially prominent in the displayings being those by the General Gas Light Company and the Mueller Manufacturing Company. Shortly after 7 P.M. the visitors assembled in the Gas Show Building, and from thence in a body they proceeded to the grand stand (this mammoth, magnificent structure seats 17,000 people), and from a well-selected, especially reserved section complacently viewed "The Siege of Delhi," done in a fireworks display which fully equaled Paines' best attempt along like lines at the famous exhibitions of fireworks in olden nights at Manhattan Beach, when Coney Island was in highest favor. This ended the Canadian Gas Association's 1912 reunion *per se*, and it was a reunion the thought of which will be vivid for many a day in the minds of those who happily participated in it. The good ship "Rochester" was sought for in due time the following morning (Thursday, the 5th), and, after a short hold up because of fog, Captain Owens ordered off the lines, and the party was bound for Youngstown via the Lake, and the noble St. Lawrence. The first stop was made at Youngstown, N. Y., and from there the party boarded special cars on the Gorge Electric Line, bound for Niagara Falls. The wonders of this never-old rush of the waters having again been

viewed the out-turn from Youngstown was sounded, and the trip from there to Ogdenenburg by way of the St. Lawrence, with its nobility accentuated in formation known as the Thousand Islands, was on. So also was the first business session of the Michigan Gas Association, the meeting place being the smoking room of the "Rochester." President F. W. Blowers (Kalamazoo, Mich.), called the meeting to order, and it was largely due to his directness (he made an excellent presiding officer) that the regular order was speedily followed, without confusion or neglect either. After the presentation of the formal reports (which included some pleasing evidence that the Michigan Gas Scholarship was keeping up its record of much good work well done), President Blowers delivered an impromptu inaugural address, which was mainly concerned with a short recital of the excellent results that accompanied the practices of the Association. The first paper considered was that by Mr. Richard C. Fowler, whose theme was "The A. B. C. of Gas Company Advertising." It was a meritorious presentation, and was all the more reliable in that it detailed many of the author's personal experiences in this particular field. The paper by Mr. A. I. Snyder, on "Variation in Heat Units in the Condensing and Scrubbing of Coal Gas," led to a brisk discussion, in which debate Mr. Jno. Keillor, of the Canadian Association, took prominent part. Others who contributed interestingly thereto were Mr. Warren S. Blauvelt and Mr. T. J. Weber. The second (and concluding session) was held the evening of Friday. The first paper dealt with "Large Profits in Small Economies," and its author (Mr. T. J. Weber) is to be congratulated on the clever way in which he managed to enumerate how much could be made from so little. The other papers were taken in this order: "The Electrical Separation of Tar from Coal Gas." It was a symposium from Prof. A. H. White, Mr. Jno. W. Steere and Mr. Jno. W. Hacker (the Scholarship holder for current term), and it is to be regretted that more time was not available for its discussion. And while it may have been termed a "symposium communication," all through its lines are shown the calculating thoughts of that master of analysis and synthesis, Prof. White. Then followed in speedy succession the paper by Mr. Frank J. E. O'Hara, on "Gas Collections;" and that by Mr. Philip Buckley, whose story had reference to "Increasing Sales of Gas Appliances by Special Campaigns." This ended the technical sessions. The election for office bearers resulted in these choices:

President.—Mr. Warren S. Blauvelt.
Vice-President.—Mr. H. W. Douglas.
Secretary-Treasurer.—Mr. Glenn R. Chamberlain.

Detroit was selected as the next place of meeting, votes of thanks were passed, and the convention was declared adjourned. The Bay street dock was reached at an early hour of Saturday, in ample time to permit the travellers to get the trains or boats that were to carry them home. The joint convention was a great success from every viewpoint. Every programmed feature was distinctly carried out. The attendance was perhaps 250, of whom 50 were of the gentler sex; and we imagine none will say nay when it is here declared that no more fraternal meeting was ever held than the one which marked this joint session of the Canadian-Michigan Gas Associations.

THE INSTITUTE MEETING.—The American Gas Institute will hold its annual meeting in Atlantic City, N. J., October 16-17-18, with headquarters in the Marlborough-Blenheim Hotel. From present indications a very large attendance is assured, and it is very evident the meeting will prove of unusual interest. The paper list is in satisfactory shape, and as the session will cover three business days, instead of the usual two, ample time will be afforded for both papers and discussion. Owing to the size of the hotel, and the season of the year, it will be possible to house all the members, and as all the meetings and the banquet will be held in the hotel, the plan will keep the members together better than usual. The famous boardwalk, being a principal attraction of Atlantic City, and this being at the door of the hotel, the objection to distance is eliminated. October is an objectionable month for meetings at the usual resorts; but not so with Atlantic City, where most of the large hotels have sufficient clientele to cause these to remain open all the year. Those attending the meeting will, therefore, have the attractions of the resort in addition to the interests of the sessions.

SAN DIEGO MEETING, PACIFIC COAST GAS ASSOCIATION.—We are officially informed that the arrangements for the directing and keeping up of the Twentieth Annual Meeting of the Pacific Coast Gas Association (to be held in San Diego, Cal., on Tuesday, Wednesday and Thursday of this week) have been satisfactorily completed. President William Baurhyte, aided and abetted by that Prince of Gas Men (Mr. John A. Britton), sitting at the Secretary's desk, have puzzled over these arrangements many times during the last quarter year; but the result is, as usual with the Pacific Coast gas men, a clearing up of the puzzle to the point of making it as clear as clear light that the Twentieth meeting will be quite up to (if it does not exceed) any of its 19 predecessors, viewed either from a technical or a social standpoint. Here is a skeleton of the arrangements' plannings; Headquarters will be in the Grant Hotel, and the same excellent hostelry will also contain the meeting room. The sessions will be convened promptly each morning at 10; and it is proposed to hold an afternoon session also. The agenda calls for no less than 9 set papers, which, with President Baurhyte address and the respective budgets to be submitted, respectively by Editors Millard, Foster and Clarke, should hold the technically inclined, pretty well to their seats during the 3 days. The listing carries a subject that should be attractive to every American Gas Engineer. It is to be a presentation of the "Present Status of Gas Engineering in American Universities, with Some Suggestions for a Specialized Course on the Pacific Coast," by that well-known Pacific Coast logician and analyzer, Prof. Robert Sibly. Of course, the Coast gas men would not concede that a convention could be held unless it were accompanied by an entertainment programme, lengthy, varied and fraternal, and surely the San Diego folks have seen to it that such a programme has been arranged. To begin with, on Tuesday (17th) and Wednesday (18th) the ladies are to be entertained by means of automobile tours in, about and around the city. Wednesday evening the banquet will be served in the Grant Hotel, at 7 P.M., and during the banquet the women folks will be the guests of the San Diego Consolidated Gas and Electric Company at a theater party. During Thursday (19th) the entire representatives will be taken for a 3-hour automobile tour, terminating at 12 o'clock, at which hour lucheon will be served in the Grant. Luncheon disposed of, the party, as the guests of the United Light, Fuel and Power Company, will enjoy a sail or a "steam" around beautiful San Diego bay, returning to the city at 5 o'clock. Thursday evening will be given over to a ball, in the dancing room of the Grant, this function to be under the administration of the San Diego Consolidated Gas and Electric Company. So it may be readily seen that the sessions of the Pacific Coast Gas Association, for the year that marks the end of its adolescent days, will be of truly virile type.

DEATH OF MR. WALTER E. REYNOLDS.—A shocking accident caused the sudden death of Mr. Walter E. Reynolds, Agent of the Public Service Company, Englewood, N. J., on Saturday, the 17th inst. The day prior, Mr. Reynolds, while trying-out a new automobile, the steering gear becoming disarranged, the car turned over, pinning him underneath. He was cared for immediately, but without avail. Mr. Reynolds was born in Cincinnati, O., September 29, 1871, and entered the gas business in 1893, taking service with the United Gas Improvement Company at its station in Bayonne, N. J. He served that Company and its successor in various capacities until his death, at which time he was stationed at Englewood as Agent. He was highly esteemed by his superiors for his ability and loved by his associates for his pleasing personality. The funeral services which were held in his late home, No. 220 Eagle street, Englewood, N. J., Tuesday evening the 7th inst., were largely attended. Amongst the mourners, besides many of his friends and associates, was a notably large delegation of Elks, with which organization he was prominently identified. He leaves a widow.

HIGH PRESSURE LIGHTING, NEW YORK CITY.—The Standard Gas Light Company, of New York, has installed a handsome display of high pressure lamps in front of its branch office, 32 to 38 West 125th street. Six 1,000-candle power lamps are hung on brackets along the front of that building, above the windows, and two 1,500-candle power lamps are suspended from a post along the curb. The lamps are of the Keith make, single mantles being employed, the approximate consumption being 17 cubic feet for the 1,000-candle power and 24 cubic feet for the 1,500. The lamps burn at 2 pounds (56 inches) pressure, operating with a small electric motor and blower, using about ¼-horse power. This installation of 9,000-candle power of absolutely steady light, of a most agreeable color, is a striking and effective example of the certainties for gas as an outdoor lighting agent. The high intensity, as well as the good color value of the light, affords the nearest approach to sunlight that one may observe in this section of the States during night time.

THE GAS METERS FIRST ANNUAL MEETING.—The Gas Meeters gathered for their first annual meeting in the handsome, new building, of the Public Service Gas Company, Jersey City, N. J., the afternoon of September 6th. After inspecting the building, those present journeyed to the "Down Town Club," where dinner was served, promptly at 6 P.M. Dinner over, Chairman Will. W. Barnes called upon Mr. Ormsby F. Potter who addressed the members in telling speech, the text of which we will print next week. Following the Potter address informal remarks were made by Commissioners W. H. Pettes and I. W. Peffiy, and by Messrs. R. U. Fitting, Gas Engineer, Pacific Power and Light Company; J. M. Butler, Secretary, and W. A. Root, New Business Manager, Bronx Gas and Electric Company; J. A. Haslett, Manager, Staunton (Va.) Gas Company; H. H. Greenfield, Secretary, Sprague Meter Company; Walter H. Hinman, American Meter Company; J. M. Brock, of Wm. M. Crane Company, and several others. The Secretary announced that the 11th meeting would be held Thursday, October 10th, at the works of the American Meter Company, 47th street and 11th avenue, New York city. There will be an inspection of the meter shops in full operation, after which Mr. Walter H. Hinman will speak on "Calorimetry."

BOOK REVIEWS.

Modern Retort Settings.—The revised and enlarged second edition of the successful text book, by Mr. T. Brooke, Superintendent of Works, Birmingham, England, published by Messrs. John Allan & Company, London, England, is on sale by the publishers of the AMERICAN GAS LIGHT JOURNAL. Price, $3. The author has spared no effort to place his material in a readily understandable form, in which he has been greatly aided by many excellent drawings. Special stress is laid upon recuperative settings, and verticals are well described. The chapter on "Analysis of Producer and Waste Gases" is one of the most comprehensive included in the book.

(*Continued from page* 183.)

to disturb that harmony between seller and buyer that is such a necessary feature of present day methods of business."

Discussion.

The President—Mr. Blinks' paper certainly contains much food for thought. I am frank to confess, until Mr. Thompson's paper of some time ago, also the reading of this paper, that I have shied from the rental plan; but it is pretty hard to get around some of the arguments Mr. Blinks presents. The paper is before you for discussion.

Mr. McCorkindale—To begin the debate I will announce what we did while in Sherman, Tex. We started with a distinct rental plan alone, maintaining the arcs at 50 cents a month. In my present location we have competition in one of two towns from a municipal electric plant, and a number of our consumers are saloon keepers. Getting up in the morning, as they would occasionally, with very sour stomachs sometimes, when we presented the bills they would say: "That is too d——d high; you can take out your d——d lamp!" Getting this from the saloon keeper, we decided he wanted to save some money and get a better light; we always preached, in that particular town especially, that you could get more light for the same money, or more light for less money, than the other concern was giving. If he wanted to keep on doing business he would have to buy the lamp and we would maintain it free, so he could not tell us to take the lamp out; and that is what we do now in both towns. We rent a lamp for 50 cents a month, and maintain it. If he buys outright we maintain it free. Only one argument in the paper "knocks" our plan, and that is the possibility of the man feeling like he wished to complain about the service, seeing he was not paying anything for service. That is a point in the paper apt to affect us. We sell the lamps and maintain them free, or we furnish the lamp and maintain it for 50 cents.

Mr. Grant—As to the rental of gas arcs. Some years ago, when with the Peoples Gas Light and Coke Company, of Chicago, most of the arc lamps there (of which they have a large number) were placed on the rental basis, and I noticed that lamps placed on rental basis were in good shape, and always kept up and used, but the lamps that were bought outright, and were not maintained by the company, fell into disuse. The mantles were broken, and the lamps were not used nearly as much as the others.

The President—Mr. Corscot, have you any remarks on this paper?

Mr. Corscot—I was thinking when the brother who spoke here just a little while ago said that the saloonkeeper perhaps having a bad night of it, and his stomach was sour in the morning, that if he approached him with a good drink he might have maintained his lamp without any trouble. [Laughter.]

Mr. McCorkindale—That would cost you more than the month's rental. [Laughter.]

The President—It occurred to me many times that the lighting business was a long way from being out of the gas companies' hand. Competition certainly in some cases is very severe, and many of us are our own competitors; but I have never hesitated to state to consumers, when I have been asked the question point blank, as to what was the cheapest form of illumination, that, on the candle power basis, one could get more light for his money on a good, up-to-date gas installation than from anything else I knew of. While the introduction of the tungsten lamps has made competition much more severe, still there are a great many places, and a large volume of business that the gas companies are still capable of handling, if they simply find the right method. I do not think any of us should lose sight of the fact, in talking to consumers as to the cost of lighting, that we should always talk on the candle power basis. At least that has alway been my plan. A man asks which is the cheaper, gas or electric light? Some electric units and gas uuits are practically equal, but when you come to figure out the volume of candle power obtained from the differing units the chances are you will find that he argument in favor of gas reaches near 50 per cent. Does anyone else care to speak on this paper, which is certainly an excellent one? We are very glad that Mr. Blinks kindly consented to give it to us.

On motion of Mr. Corscot (seconded), a vote of thanks was passed to Mr. Blinks.

NEXT PLACE OF MEETING.

On motion of Mr. Corscot (seconded), Milwaukee was selected as the next place of meeting.

The President introduced Mr. D. E. Callender (Racine), who read the following paper on

MAINTAINING SERVICE DURING EXTREME COLD.

In the preparation of this paper it has been my intention to present to the members of the Wisconsin Gas Association a brief account of the trouble we experienced in the southeastern part of the State, endeavoring to maintain service, and to prevent as much as possible, excessive leakage due to underground trouble. It can be stated, without any fear of contradiction, that the months of January, February and March, 1912, were the worst months experienced in many years by all public service corporations and especially those properties having mains and services underground. The great depth of frost, which in places penetrated as far as 5 feet, was possible, owing to the lack of snow. From the government records I ascertained that less than ½ an inch of snow fell during the entire month of January, and when, toward the middle of February, we had a blizzard, the frost had already reached the services and in many instances the main pipe.

In passing, it may be of some slight interest to you all to have a record of the temperature during the month of January, as furnished by the official observer. The maximum temperature was reached on January 23d, when the thermometer registered 31° above zero, and the minimum on January 7th, when the records showed 19° below zero. Not once in January did the mercury rise above the freezing point; as a matter of fact, the temperature remained below 32° until the middle of February. The average maximum temperature for January was 15.6° above zero, and the average minimum 2° below zero. Our troubles started immediately with the cold weather, and kept increasing with such rapidity that it seemed almost a physical impossibility to keep customers supplied with gas. Our difficulties at the outset were confined almost entirely to customers' premises. The greatest amount of trouble was found in risers, many of which, especially in the older buildings, are installed in the outside walls. We also experienced difficulty in residences where the cellar extended under only a part of the building. Areaways under sidewalks were likewise a constant source of poor service. All these stoppages were caused by condensation, owing to the extreme cold. Frequently the piping inside the cellar wall would freeze up within an hour after being thawed out.

We averaged 90 complaint calls a day during January, and it required every available man to keep the services and house piping clear. Many times we were able to provide permanent relief with one visit; but in stores and factory buildings, where the inside piping was exposed, we found it necessary to change the entire run. These alterations were necessary to insure good service, and to keep our customers from seeking other means of illumination.

During the latter part of January, main and service troubles began to develop at such an alarming rate that we found it absolutely necessary to work night and day, including Sundays, in order to avoid serious results, as was the case this season in different parts of the country. All leak complaints were investigated by our regular complaint man, and when he reported there was no apparent trouble with the house piping or meters, search was immediately instituted for the leak outside the building. We discovered that the gas escaping from the main or service, as the case might be, would follow along the pipe below the frost and enter the residence through a sewer or water trench and was nearly always detected at the water meter. In one or two homes the gas was of sufficient volume to cause the occupants to leave the premises until the trouble was remedied. Temporary relief was given by making an opening outside of the cellar wall, in this manner ventilating the sewer ditch until the outside men could locate the break and make repairs. On account of the numerous leaks in various parts of the city, repairs of a temporary nature only were made.

The greatest number, in fact nearly all, of our main and service breaks, were in streets which are paved with brick laid on concrete foundations, the tearing-up of which took considerable time and entailed an unusually large expense. I might add, that the relaying was also expensive, because our city ordinance requires, where pavements are disturbed, that all dirt must be removed, and the trench refilled with lake sand. Another item of expense was due to the fact that the pavement was opened where the odor was detected, only to find that the leak was 100 or 200 feet distant, making it necessary to tear up more of the street to reach the leak.

With the exception of breakage of mains and services, we did not experience an unusual amount of difficulty with the distribution system. On one street, paved with asphalt and laid on 18 inches of concrete, our 3-inch main was frozen, and consumers for a distance of 2

blocks were practically without gas for a period of 24 hours. We anticipated considerable trouble with this particular main, as it has been in the ground for more than 30 years. We were fortunate, however, in getting it clear by a generous supply of alcohol forced into every service in the district affected. To keep this main from giving further trouble, we used alcohol at frequent intervals until the weather moderated.

Two river crossings, boxed and suspended from bridges, did not give us any trouble, although as a safeguard alcohol was forced through them every 10 days.

Without a doubt, the sources of greatest annoyance to gas companies are the underground conduits of the telephone and electric companies. The joints in these ducts are not tight, and gas leaking from the mains or services, we found, will follow the conduits for several blocks before it is detected. This is especially true if there is snow and ice on the ground and the vents in the manhole covers are frozen tight. In a case of this kind, our method of locating a leak is to stop up the openings in one side of the duct with fireclay; by this means we were able to confine the gas between two manholes—a distance, in most cases, of one block. After this, it was sometimes necessary to tear up nearly the entire block before the seat of the real trouble was discovered. The gas escaping into one conduit was in such quantity that, even though the manhole cover was removed to ventilate it, a spark from a passing car ignited the gas, with the result that one laborer was so severely burned by the explosion that it was necessary to send him to a hospital.

Services installed with top tap and universal joints gave trouble by breaking at the street ell, and in one instance tore out a small section of the main. Another source of trouble was the breaking of stopcocks on the services and in two places the service pipe broke off at the coupling. We had, and are still having, a great deal of trouble with our drip risers, caused by the breaking off of the ell inside the curb or the universal joint at the pot. We learned of these because the drip pots would fill up and shut off the gas of one or two consumers, and service could not be restored until the pot was uncovered and repairs made. In addition to breakages we found two drips frozed solid. We had no complaints of frozen service pipes during the extreme cold weather, but after 2 weeks of mild weather many were found frozen. When uncovered, we found small holes in the street ells and in the service pipe, giving the impression that they were affected by electrolysis.

During the winter we repaired several breaks in the main system and in every instance the pipe was below the frost. From this it seems that these fractures had been in existence for a long period of time, and that these openings were increased by contraction sufficiently large to cause excessive leakage. Nearly all of our services are tapped on top, and all that were opened were in the frost; consequently, the breakage can be entirely charged directly to the severe weather conditions. Leakage in Racine for the first 3 months in 1912 increased nearly 100 per cent. over the corresponding months in 1911.

Discussion.

The President—We have listened with great pleasure to Mr. Callender's paper, and I do not think any of us in Wisconsin failed to have our troubles during the first 3 months of this year; I know I did. We had no unusual case, other than in a situation where we cross a river some 500 feet from our holder outlet. This is a 10 inch pipe laying on top of the concrete arches, and barely covered its tip coming about to the top of the sidewalk curb. After many days of cold weather we noticed a very great decrease in our pressure on the peak load, and found that on the works' side of the river we were having no trouble whatever. This main, as I said, was entirely covered, and I never thought for a minute that it would give us any trouble, but on digging out this main, at each end of the bridge and in the middle, exposing it and tapping the main, we found we had an ice plant. It seemed that practically two-thirds of the pipe had been literally filled with frost. The only way I could account for it was that the gas in the holder, and between the holder and the bridge, paralleling our steam heat mains, was very warm. When it came to the bridge the main separated, the heating main going to one side of the bridge, the gas main to the other. The gas rising, to go over the top of the bridge, immediately struck this extreme cold, and I can account for it in no other way save through excessive condensation, and as soon as it condensed it froze. We got rid of our trouble by having a hot water drip at each end of the bridge running in hot water at the middle of the bridge by means of a curved pipe, that we ould turn one way or the other, pumping on the end of the bridge until we pumped hot water, when we k new the frost was all out During the 43 days of extreme cold w eather we had this trouble twice. Others present may have had some queer experiences, if so, we would be very glad to hear of them.

Mr. Stroebel—We have had a lot of trouble during the cold spell last winter at Fort Atkinson. In a main which runs under one of the city bridges, during the real cold weather our service thereto began to shut off on the north side. We got a small portable boiler and used live steam to clean out the frost. We also tried it on the two services that gave us trouble and cleaned them out, too.

The President—I always hesitate to use live steam in a case of that kind, for fear of greater trouble from naphthaline. I always used hot water where I could. In this case we moved a water tank, used on a traction engine over to our electric station, filled it with water, and turned on 150 pounds until we had it boiling. It would travel almost any reasonable distance without it cooling off.

Mr. Luebkeman—At Eau Claire we have a concrete bridge about 300 feet long, and once or twice a week we clear the main from frost by using salt brine, taking about 4 barrels of water and 3 or 4 pails of salt mixed together, putting it in hot. The brining pipes to the large main pipe would be about 10 feet apart, so one-half of the brine would drain one way and the other half going the other way.

The President—And did not have any trouble w ith it?

Mr. Luebkeman—None at all; had a drip at both ends of the bridge.

Mr. Dequine—We had much trouble in Madison in a case where we had a very shallow main whlch was laid before street improvements were made, and n ot lowered after grading, at the high point there was a dep th of about 2 feet, and we had quite a time locating the exact poin t, because it was a main feed into the factory district, which is quite large. When we did get it, we uncovered the high point, filled a drip wagon with hot water and salt, pouring the mixture into the main, and then pumped the drips at both ends. We managed to get hold of the actual high point, for the water ran both ways. We had no trouble at all after that, and gave it a regular dosing about every 10 days. We had one main laid last summer under a bridge, with absolutely no protection at all from the weather, that did not freeze there, but we had contraction which caused a leak. The bridge was quite a bit higher than the st reet, and, in order to get up to it we had much trouble. In one of those joints the contraction was sufficient to pull out the joint. The lead was lossened, but it required nothing more than a little calking.

Mr. Luebkeman—Has anybody had much trouble with rusty mains, say mains down for 20 or 30 years, and what method was used in getting out the rust?

The President—What size or kind of main?

Mr. Luebkeman—About 3-inch.

The President—Cast or wrought iron?

Mr. Luebkeman—Wrought iron. We have about 3 or 4 blocks of that kind of main, which I have to remove this season. I thought I would try a vacuum pump and pull the rust out by vacuum, and I do not know whether I will succeed or not. The idea is to run a hose right into the main for some distance, say 100 or 200 feet. Has anybody tried it?

The President—I question whether you could do it as well with a vacuum pump as when using 150 or 200 pounds pressure behind it.

Mr. Luebkeman—The trouble with that is in pushing it through you will choke it.

The President—My way of fixing it, I will say frankly, would be to dig it out and put in a bigger main.

Mr. Luebkeman—I do not like to do so on paved streets. I cleaned about a mile of it, where there is a slant down hill, and used water, for instance. The services are 100 feet apart. Starting at the low point and working back, we cleaned out the main, and it worked well where there was plenty of slant, but I am afraid that on level ground it will not work so well. It works well on a slant for we tried it with city water pressure.

The President—Your idea was to use a gas-driven compressor?

Mr. Luebkeman—And draw the rust back, in the same manner as a vacuum cleaner is operated.

The President—Push the pipe back, letting it draw as it went along, pushing the pipe into the main?

Mr. Luebkeman—Yes, sir; using a ¼-inch hose and a ⅜-inch pipe to force it through. I think it could be pushed nearly a block in that way.

The President—I think that would work.

Mr. Luebkeman—Yes; put on plenty of vacuum. Say 30 or 40 pounds, and cut the main off about a block apart.

Mr. Jones—As to main troubles, during the extreme cold weather we had a case in Appleton on our 4-inch high pressure line. I was called up at 11 A.M., to find the line stopped up with frost. We called the street force at once and found the stoppage to be about 1,500 feet from the works where main crosses a bridge. We used boiling-hot salt water, and it worked through in about an hour's time; the pressure held up until noon on the Neenah side; it was on again at 10 minutes past 1. That is the first time we have had this trouble since we have been carrying a high pressure of from 10 to 25 pounds. For the first 2 years I think we carried in the neighborhood of 2 pounds pressure and pumped into a holder at Neenah and Menasha, about 8 miles distant. We frequently had trouble with frozen mains in the winter time, but the past winter was the first time we have had a freeze-up since we carried high pressure. Did Mr. Callender have any trouble with his high pressure main during the extreme cold weather?

Mr. Callender—No; not any serious trouble.

Mr. McCorkindale—We use high pressure entirely up our way. We have two towns, and carry ordinarily downtown at 6 o'clock about 20 pounds with about 25 at the works. We noticed that, by carrying 25 at the works, each night we were getting just a little bit less pressure all the time until it dropped to 10 pounds, so we knew there was a stoppage somewhere; yet during the daytime there was no drop at all, or when there was not much used. So we began to dig test holes and make tests to see where our trouble was. We found it out on the main highway, close to where the main runs through a creek. We got rid of it by building a fire around the pipe on the outside and cutting through the ice right at the creek. The latter was frozen solid, and we would keep the fire there long enough to do that; but at that point, just before we get to the creek, we will put in another box to catch the water from our baffle tank, and get still more of the condensation. If we keep that condensation removed from there we believe we will save a recurrence of the trouble. At another place, down town on the main street where our main parallels an old sewer (the main is probably about 2 feet from the latter) there was a cave-in which very nearly exposed our pipe, and there we had a complete stoppage of a 2 inch high pressure main. The way we found that was simply by knowing that one consumer on this service had the pressure he needed, whereas, the man next door had none, in fact, nobody on the other side had it. So it was not much of a job to find out where the stoppage was. That was the first time we have had any main completely closed. Our main line was never closed, although it was pretty dangerously close to it.

The President—There is no question but that we all had our troubles during the past winter, and I do not know of any case where the man that was on the job was not able to handle it in some manner, showing that we are resourceful, if nothing else.

Mr. Easterly—At Fond du Lac we cross several bridges, and we found the most effective way is to put wood alcohol in the mains at those points. We send a man to these places in the morning and along towards evening. We found that was very effective, and have had very little trouble. I would like to ask if any of the companies found a good way of insulating such mains so that it is impossible for the frost to get into the pipe. I mean, by winding the main with burlap, then covering the pipe with it closely. We are thinking of doing that this season.

Mr. Luebkeman—Mineral wool can be used.

The President—Regarding the trouble we had on this bridge, I have been giving the matter much thought and have about concluded to build—of course, the construction of this will be very easy—a concrete box around it, then pack it with some good insulating material. The trouble, as I feel in this case, is from the fact that for 300 or 400 feet, immediately on the gas leaving the holder it runs absolutely parallel with the heating main, and I cannot help but feel it is due to that fact, because you can tell, if any of you have central station plants where your heating mains are, from snow on the ground, it stands to reason that when steam is carried in these mains 24 hours a day there is bound to be some radiation, and you will always find that the ground never freezes anywhere near such mains; so if the gas main is lying alongside of the heating mains I cannot help believing that the gas main must be as warm as the heating main, consequently the temperature of the gas must be raised, and as the gas main comes up over this bridge and leaves the heating main, it simply strikes absolutely extreme conditions. I want to build this box right alongside of this main and pack it with mineral wool or something of that nature.

Mr. Easterly—In one case, respecting a 6-inch main going under a bridge, we thought of covering it with burlap or something of that sort, then putting a 10-inch pipe over it to protect that burlap.

The President—We cover high pressure steam pipes to prevent radiation of heat, and I do not see why, in an exposed pipe such as you speak of under a bridge, you could not build a box around it, with some sort of insulation, then cover it with either another pipe or sheet tin, and accomplish the same results.

Mr. Easterly—I think the pipe would be better than the tin.

The President—I meant heavy sheet iron. I do not think it would be necessary to put a larger sized wrought iron or cast pipe over it, or anything of that kind. Put on a heavy sheet tin; although it need not be very heavy in a case of that kind.

Mr. Luebkeman—We have 700 feet of 8-inch wrought iron pipe running under a bridge, with a board sidewalk above it, and have a 2-foot 2-inch plank box all around that pipe, filled with mineral wool. That was put in 12 years ago, and we have never had frost there. Right over the top of the box we run corrugated galvanized iron, and as the water drops through this board sidewalk it passes onto this galvanized iron and runs off. On the inside, at top of box, we have inch boards with tar paper between. In 12 years we have not had any trouble in that pipe, and it is exposed for 700 feet. It is an 8-inch main.

The Secretary—I believe someone on the engineering staff of the Milwaukee Company can add a little bit at this particular point as to bridge pipe covering.

The President—If any of the Milwaukee engineering staff is present, we would be glad to hear from him.

The Secretary—Mr. Humphreys is nearer to the location of the topic I have in mind, I think.

The President—Mr. Humphreys, let us hear from you.

Mr. H. M. Humphreys—We have a 20-inch pipe running across the 27th street viaduct, half a mile at least in length, that is entirely exposed and unprotected. We did not find any stoppage on it this winter. Being afraid of it at one time we put in some wood alcohol about 150 feet from the south end of the bridge. The rest of the pipe all the way across was perfectly clear. We tried it several times, tapping on the outside, and knew it was perfectly clear of any frost.

The Secretary—It is the method of covering that we had in mind.

Mr. Humphreys—This did not have any covering.

The President—I never had any fear of the distribution system, at least in my experience, as long as everything was covered. Even though the main might in some places be below frost, and in some places might be in it, yet unless the conditions were very excessive, such as the case that I stated in my own experience, where the gas was being heated to such a high temperature before striking the extreme cold, there was no difficulty. I do not know whether or not anyone else has ever been up against anything of that kind.

Mr. Wortendyke—Mr. President, the fact of heating your gas, unless moisture was present, would not change the amount of moisture in the gas. What I mean is, that you have a certain amount of moisture in your gas as it leaves the holder. Now, if the main paralleled by your hot water line is perfectly dry, the raising of that gas at that point will not increase the amount of moisture carried.

The President—No, I agree with you; but would not the excessive conditions have a tendency to effect the condensation somewhat?

Mr. Wortendyke—The fact of heating the gas, unless the main is wet or a drip is near that holds a lot of water, etc., where it can pick up moisture, this would not increase the amount of moisture in your gas at all.

The President—That may be true. I could not account for it in any other way, as I said. The main, until the heating main was laid alongside of it, apparently working under identically the same conditions, never apparently gave any trouble.

Mr. Wortendyke—The extreme thermometric conditions made our trouble this past winter.

The President—It may be entirely attributable to that.

Mr. Wortendyke—When laying a main across a bridge or other exposed area, if, before striking the exposed part, increasing that main 50 per cent. in area will greatly decrease the quantity of condensation. Say you are laying 1¼-inch pipe, by increasing it to 1½ or 2 inches, say 3 feet before meeting the exposed area, condensation will be greatly lessened.

Mr. Gregg—Mr. Rahn, one of our assistant engineers, who is present, spent about 2 months in an automobile during January and February. Perhaps he would tell us something about freeze-ups, for I know he can.

Mr. Rahn—We had quite a siege here last winter, and were all

forced to get out in the cold. To tell the truth all of us were frozen quite a bit; believe me. As to our bridge pipes, in respect of covering, we saw all of them last winter. We have a number imbedded right in the concrete of the pavement, that are only covered with concrete. We did not have much trouble in such situation, save in the case of a bridge pipe on the west side of the city. The stoppage was slight but we overcame it by introducing wood alcohol. A pipe on 27th street (our largest one I think) which is absolutely uncovered, and much exposed to the weather, did not bother us; and likely that part of the valley is probably one of the coldest places in our city. We had one service experience downtown that is probably in line with this discussion—it is one of our first services (2-inch) and has given us considerable trouble. In addition to a frost stoppage there was a rusted surface. We attempted to clear its service with wood alcohol, but were unsuccessful. We then used a pump and that did not seem to even budge the stoppage. Next we snaked a wire towards the main from the house end of the service until we struck the former. That seemed to loosen the rust stoppage. Then we put on the pump and blew the rust into the main. I do not know whether that could be done in a 2 inch wrought iron pipe, but one should be able to do it on 100 feet. Our distance there was fully 125 feet, I know.

Mr. Patton—I understand that at our Elkhart plant about 6 mains cross a river at different points. Prior to 1910 these mains were frozen up, say 3 or 4 times in the winter months. They installed a 30-inch pipe condenser, about 200 feet long, between the outlet of the holder and the governor exposed to the frost, and last winter they said they did not have a single freeze-up in the pipes running over the bridges. Their idea in installing this condenser was to remove the moisture from the gas before it reached the bridge. It proved so successful that like devices have been installed at Kankakee, Ills., and Mount Clemens, Mich., respectively. I do not know what results were gained as to frozen services, etc., but I do know that the scheme worked well in the first instance.

The President—If no other gentleman has an experience to relate, let me state we have come to the end of our set papers.

On motion of Mr. McCorkindale (seconded by Mr. Corscot) a vote of thanks was tendered to Mr. Callender for his interesting paper.

EXPRESSING THEIR ACKNOWLEDGMENTS.

Mr. Corscot—Mr. President, the Nominating Committee did not have any conference with the gentlemen whom they recommended for election as office bearers, so as to satisfy us they will serve and that their "hats are in the ring," I would like to call on Mr. Wortendyke to say whether he is pleased with the nomination made for the presidency of this Association.

The President—Let me say, Mr. Corscot, Mr. Wortendyke will be in like position this year to that in which I was last year—he will have to. However, we will hear from Mr. Wortendyke.

Mr. Wortendyke—Mr. President and Gentlemen: I appreciate the honor you have conferred on me. I will endeavor to do the best I can. I am like Mr. Buck; somebody has got to take up the work, and I may as well be the next victim. I would like at this time to bespeak your help. However your officers may try, unless the members give their help, through papers written and the subsequent discussions, a meeting cannot be very successful. I will try to do my part, and I earnestly hope you will aid me by trying to do yours. [Applause.]

The President—Is Mr. McMillan present? If not, we will hear from Mr. Harman at this time.

The Secretary—Mr. President and Gentlemen: It is needless for me to say anything at this time in connection with the nomination and election to a renewal of my term. As far as making any promises goes, I think I will let my future acts speak for themselves. I will endeavor to do as well in the future as I have done in the past, probably just a little bit better. We have had 2 pretty good years, and unless signs fail we are to have a better year and a better meeting in 1913. I thank you for the honor. [Applause.]

Mr. Corscot—I am glad to note that the Secretary and Treasurer accepts the dual office, and that the Secretary is satisfied with his salary. [Laughter.] The Association certainly should extend to him a vote of thanks, because he has undoubtedly been very successful in bringing the Association to a financial "bias," as a certain party remarked, and which is certainly highly satisfactory. We have, so-to-speak, money to burn.

The Secretary—Let's have a fire. [Laughter.]

Mr. McCorkindale—I would like to add to that, with the gentleman's permission, the thanks of the Association be extended to all of the retiring officers. [Seconded and adopted.]

The President—I assure you, gentlemen, we appreciate your thanks in this matter, but I rather hesitate to put that motion just at this moment, beeause we have work which remains to be taken care of before we adjourn. I am afraid if I put this motion some of you will feel that the meeting is over. Not wanting you to feel that way just yet, with your consent the motion will go over for the present.

(To be Continued.)

Correspondence.

[The JOURNAL is not responsible for the opinions expressed by correspondents.]

A Request for "Engineer" to Make Himself Known.

THE ELECTRIC POWER CO., LIMITED,
BELLEVILLE, ONT., Sept. 3, 1912.

To the Editors, AMERICAN GAS LIGHT JOURNAL: I notice in the JOURNAL, for September 2d, an article by "Engineer," in which appears some astounding statements with reference to the present cost of generating coal gas. A statement is made that only 5 cubic feet of gas per pound is obtained from the coal. I would refer the writer to the St. Helen's gas works, where the gas produced per pound, corrected to 60° F. and 30 inches bar., was 6.41 cubic feet, with a yield of coke for sale of 1,238 pounds per ton of 2,000 pounds. In comparing this "New Method" with other methods, you will note that, in one case, the net results are given, and in the other the gross, making the result appear absurdly in favor of the "New Method," whereas it is exceedingly doubtful if there is any gain whatever in this method over the most up-to-date present methods, taking the author's figures as being correct. We have lately seen so much of this kind of article, in reference to the "Coalite" process in England, that I feel sure you will agree that, when such statements are made, the name and address of the author should be given. It would be interesting to know whether the article referred to is simply an advertisement for the "new process," written by the patentee of the "new process," or whether it is a genuine contribution to the JOURNAL by an unbiased writer. Would you ask "Engineer" to come forward and give his name; then the "New Method," as set forth by him, can have a fair and unbiased discussion amongst those gas engineers who may feel interested. Personally, I should be glad to learn more of the "new process" if it can be proved more economical than the present methods, but in my opinion nothing is gained by taking the poorest results obtained by one process and comparing that with the best that can be obtained by another. Yours truly,

THE ELECTRIC POWER COMPANY, LTD.,
M. COWPER-SMITH, Consulting Gas Engineer.

Management & Commercial Methods.

"VARYING OPINIONS ON METHODS OF DISTILLATION."—By "A DISTILLER."—The view of the varying opinions on retort house methods of distillation, makes it interesting to note that the largest single unit erected in this country this year, for the purpose of coal gas manufacture, is a stack of 10 benches of horizontals, which are being installed by the Detroit City Gas Company, the contractors being the Laclede-Christy Clay Products Company, of St. Louis. The benches are of full-depth type, fitted with the Laclede-Christy system of patented recuperators. The settings have through retorts, 22 feet, 3 inches long, and 16 inches by 28 inches, cross section throughout their entire length. There are 8 retorts to a bench, placed in 2 vertical tiers, 4 retorts in a tier. There are 2 furnaces to each bench, as drawing machinery will be used from both sides of the benches. The latter are of the most up-to-date design, with clay retorts and silica settings. They will operate on 240 pounds of fuel per ton of coal carbonized, while the stack of 10 benches will be capable of producing 2,000,000 cubic feet of gas per 24 hours. The waste gases are taken down into a main flue (which extends the entire length of the benches) built into the concrete foundation; this main flue being connected to a perforated radial block chimney, 4 feet internal diameter, by 90 feet high, which is also included in the contract for the benches. The ironwork throughout is of heavy designs, and is being furnished by the Kerr-Murray Manufacturing Company to the Laclede-Christy Company. The front and rear back-bars are simple 15-inch I-beams, and the end bars consist of 6 pairs of 15-inch I-beams, on either extremity. There are 2 sets of 8-inch standpipes, one on each end of

each retort, the straight sections of the standpipes being of steel, the covered portions being of cast iron. The hydraulic mains are of steel, 30 inches by 30 inches, of U-section, the mains on each side being continuous. There are two 16-inch gas offtakes, one at each end. Connected to each section of hydraulic main is an exterior liquor overflow, from designs by the Detroit City Company's own engineering force. There is also connected to each section of main a standard Faben tar and ammonia apparatus. A novel feature in connection with the bridge pipes is a butterfly valve, which may be opened and closed from the retort house floor, so as to easily permit of the unsealing of the dip pipes. The dam sheets of the cleaning pockets on the hydraulic mains are, of course, built correspondingly low. Ground for the foundation of the benches and retort house had hardly been broken by mid-March, but by the middle of April the brickwork of the benches was going forward under a temporary roof erected by the Laclede-Christy people, and the benches will be under fire and producing gas at an early day in October.

Recent Patent Issues.

Prepared for the AMERICAN GAS LIGHT JOURNAL by ROYAL E. BURNHAM, solicitor of patents and counselor in patent causes, 833 Bond Building, Washington, D. C., from whom illustrations and specifications of any patent mentioned below may be obtained for 20 cents.

1,036,727. Lighting Device for Gas Burners. G. H. Schaetzel, St. Louis, Mo.

1,037,037. Pilot Burner for Gas Stoves. A. C. Mott, Jr., Philadelphia, Pa., assignor to Thomas, Roberts, Stevenson Co., same place.

1,037,095. Gas Washing Plant. H. D. Williams and W. Ahlen, Duquesne, Pa.

1,037,208. Safety Gas Valve. H. R. Cox and W. Schmidt, New York City.

1,037.275. Automatic Cut-Off for Gas. E. G. Marin, Syracuse, N. Y.

1,037,276. Globe Holder. C. O. Marris, Akron, O.

1,037,337. Regulating Device for Gas Supply Plants. G. Schwabach, Charlottenburg, Germany.

1,037,398. Gas Burner. T. B. Wylie, Osborne, Pa.

1,037,480. Charging Device for Furnaces or Gas Generators. W. Hoeller, Cologne-Ehrenfeld, Germany.

1,037,481. Gas Generator. W. Hoeller, Cologne-Ehrenfeld, Germany.

1,037,488. Inverted Mantle Lamp. G. G. Jones, Philadelphia, Pa.

1,037,695. Means for Collecting Average Samples of Gas. H. J. Westover, New York City.

1,037,764. Apparatus for Making Gas. J. H. Hirt, Sewickley, Pa., assignor, by mesne assignments, to Allis-Chalmers Co., Milwaukee, Wis.

1,037,822. Vertical Retort for Carbonization of Coal or the Like. A. McD. Duckham, Surrey county, England.

Items of Interest
FROM VARIOUS LOCALITIES.

MR. H. A. SHUNK has been appointed salesman, for New York and vicinity, by the General Gas Appliance Company.

MR. J. A. HASLETT, until recently New Business Manager for the New Jersey Gas Company, with headquarters at Glassboro, N. J., has been appointed Manager of the Staunton (Va.) Gas Company.

MR. EDWIN M. WALKER has resigned the position of General Manager of the Muscatine (Ia.) Citizens Railway and Light Company to assume charge of the trading of the Union Electric Company, of Dubuque, Ia. The correspondent who forwarded this mention adds: "This takes E. M. W. out of the gas business, unfortunately, save n so far as it will be his task to try to keep 'natty' George McLean from getting it all." Go ahead "E. M. W.," yet it is quite a certainty that Mr. McLean will manage to get his share of that which is in evidence.

"G. E. D.," writing from Chattanooga, Tenn., under date of the 6th inst., says: These changes have taken place in the personnel of the staff of the Chattanooga (Tenn.) Gas Company: Mr. H. D. Boyle, formerly foreman of the works, has been promoted works' Superintendent—a promotion well deserved. Mr. W. J. Austin has been moved to the responsible position of Superintendent of Distribution—he had been shop foreman, and Mr. E. J. Darling succeeds Mr. F. F. Kelley as Chief Clerk. All the gentlemen mentioned have been in the Company's service for some years.

"THE general lighting of the hall or Toronto structure in which was held the magnificent Canadian National Fair this month was notable for its completeness and serviceability. The outfit furnished by the General Gas Light Company included three large cluster fixtures, which were of altogether type from those heretofore used in connection with the former notable illuminating displays in the exhibitions at Denver, New York and Boston. A circle or chain of Humphrey lamps ranged completely around the hall at suitable height, the lamps being suspended from specially designed brackets. Humphrey 'Thirties' were used in the illumination of each booth. The booth of the General Gas Light Company was a model of handsome decoration, showing as it did to their best advantage samples of the Company's many specialties in lamps, mantles, shades, etc. A telling feature of the Humphrey show was an excellent working example of the Humphrey system of window lighting. At both main entrances to the building were located two gas lamp posts of the very latest model, and from special designs by the General Gas Light Company. Each post carried four 3-light Humphrey outdoor arcs; also, one of its new boulevard type of lamp. That the booth was capably manned may well be understood that, at different times, someone or more of the named gentlemen were in the demonstration chair: Suave and smiling William M. Blinks; spry and neat Hubert R. Humphrey; sedate and watchful C. T. Chisholm; long and smiling 'Jim.' P. Conroy; and the explosive, nevertheless convincing, 'Willie' M. Weadley. The booth was always the center of a crowd of interested and questioning visitors.—C."

THE Economy Gas Range Company has been incorporated under the laws of Delaware with a capital of $100,000. The applicant for the necessary papers was Mr. W. W. Wunder, of Reading, Pa.

A LEADING feature of the campaign being conducted by one Lawrence Dolan, for election to the New Jersey State Assembly, transpired when he was haled before Recorder McGovern, of Hoboken, N. J., charged with having used gas from the mains of the Public Service Gas Company without the quantity taken having been registered on a meter. Some months ago Dolan failed to pay a bill of $75 which he owed for gas, and the Company removed the meter. Investigation showed that he had connected the house riser to the street service by means of a rubber hose. The Recorder held him for the Grand Jury.

A LINE from "T. R. R.," written in Denver the 29th ult., declares that Mr. H. L. Frueauff, General Manager of the Pueblo (Col.) Gas and Fuel Company since 1909, has been transferred to Sedalia, Mo., there to take charge of the gas, electric light, water and street railway systems of that city. His successor at Pueblo is Mr. James M. Daily, for 3 years Secretary to the Company.

MR. ELMER DOVER, General Manager of the Byllesby properties on the Pacific Coast, succeeds in that position Mr. G. Groesbeck, who had to retire from active work on account of ill-health.

MR. D. K. CRIGHTON, formerly General Manager of the Lansing (Mich.) Gas Company, has removed to Cleveland, to actively assume the duties of Engineer to the Gas Machinery Company. Mr. Crighton, who has been associated with the gas industry in various cities, and in various capacities, for many years, is thoroughly familiar with the laying out, constructing, operating and reconstructing of gas plants, and is particularly well-adapted for carrying on the duties that go with his new connection. Mr. Crighton is also the happy possessor of a pleasing personality, and there is not the shadow of a doubt that his Company will be well served by him.

"A. H. G," writing to us from Toledo, O., under date of the 9th inst., notes that the hearing in opposition to the 70-cent (net) rate for artificial gas, as declared in an ordinance recently passed by the City Council, was held before the Public Utilities Commission, in Columbus, the 5th and 6th insts. Much testimony was submitted by several

employees of the Toledo Railways and Light Company, and no outside experts was retained by the Company. The city was represented by Corporation Attorney Schreiber, who failed to put the city's expert, in the person of "Doctor" Bemis on the stand. The authorities, at the last moment, asked to have the Commission appoint a special engineer (to be remunerated, of course, by the city), and instruct him to review the testimony submitted by the Company, subsequently presenting his findings to the Commissioners, with a view as the city's attorney put it, "To enabling the Commissioners to make a quick decision."

THAT hale, hearty and wholesome gentleman, Mr. J. G. Diffenderfer, has resigned from the staff of the Detroit (Mich.) Suburban Gas Company, in order to engage in the real estate business, with headquarters in Detroit, at No. 385 Montclair avenue. We are sorry to lose "Diff." from the active ranks of the fraternity, but nevertheless his former co-workers will wish him that success which his application and straightforwardness entitle him. In fact, failure in his new field is impossible, for within the past 5 years, while acting in an amateurish way, in and about the real estate possibilities of Michigan's handsome city, he managed to bring off some deals that were "quite encouraging." The best of good luck to him.

THE Iowa City (Ia.) Gas and Electric Company, the purchase of which was originally concluded last July, has been taken over by its purchasers, the United Light and Railways Company, which corporation is controlled by Messrs. Frank Hulswit and Richard Schaddelee, of Grand Rapids, Mich. Mr. E. C. Weisgerber, General Manager of the Cedar Rapids (Ia.) Gas Company (another of the Hulswit-Schaddelee properties), will have charge of the Cedar Rapids plant, and of the Ottumwa plant as well. Mr. W. H. Hulswit, Commercial Agent for the Cedar Rapids Gas Company, will take charge of the commercial end at Iowa City, until a permanent manager is appointed.

THE Jacksonville (Fla.) Gas Company has been granted a franchise to furnish gas to the residents of the outlying district known as South Jacksonville, and the work of putting the pipe system to and through its streets will be completed by November 1st. Of a verity Mr. Hoyt and his associates are neither inactive nor unprogressive.

MR. HAROLD F. KEYES, Superintendent of the Leominster (Mass.) Gas Light Company since July, 1910, has resigned that berth. The Worcester (Mass.) *Telegram*, in its Leominster "notes," referring to the many changes that have taken place on the staff of the Leominster plant, since the latter became the property of the Massachusetts Lighting Companies, remarked recently, "The only one who has survived the storm of changes in the Company is its old white horse. Others may come and go; but the old horse still sticks."

VERY scant advices, dated Boston, Mass., the 8th inst., are to the effect that Mr. John Russell Todd, 78 years old, 620 Beach street, Revere, night foreman at the gas plant of the Lynn Gas and Electric Light Company, was stricken with heart trouble, while actively attonding to the duties of his position. He died while being removed to the Lynn hospital. Born in Lancashire, England, March 29th, 1834, he came to this country in 1852, settling in Massachusetts, somewhere near Fitchburg. He was in the Lynn position for several years, and had been connected with other New England plants. A widow and 5 children survive him.

MESSRS. A. C. ELSTON and associates have purchased the Noblesville (Ind.) Gas Company, with a view to extending the system to the outlying district of Tipton, Ind. The executive management of the Company is: President, A. C. Elston; Vice-President, M. A. Clifford; Treas.-Secy., D. A. McCollum; Manager, V. R. Heath.

MESSRS. C. D. PARKER & CO. have announced their incorporation, under the laws of Massachusetts, the combination to be of record the 31st inst. The Directors are: H. B. Lamont, M. E. Crush, E. L. Bennett, C. R. Adams, C. D. Parker and Bowen Tufts.

THE "combination crowd" in the Millville (N. J.) Council, the evening of the 9th inst., wanted a franchise for the operation in the named district of a gas plant, the projectors thereof having assumed the old-fashioned title that "went" in years gone by of "The Consumers Gas Company." How the changes were anvilled on that title 30 years ago! The vote was 7 to 6. Councilman James E. Mitchell, a prominent glass manufacturer, and one of the few who have been really public benefactors to the district in times past, was outspoken in his condemnation of the scheme, which he declared was altogether "spite work" on the part of those who were, from one occult reason or another, opposed to the Public Service Company, the dealings of which with the people of Millville in respect of its public lighting supply had been eminently satisfactory.

THE Davis and Farnum Company, of Waltham, Mass., are constructing two purifying boxes in the new purifying house of the Gardner (Mass.) Gas, Fuel and Light Company. The house is of concrete, and the boxes are from the last designs favored by the Davis & Farnum folks.

THE Directors of the New Bedford (Mass.) Gas and Electric Company have perfected the following executive management: President, Oliver Prescott; Vice President, F. H. Gifford; General Manager, Wm. H. Snow; Chairman Board of Directors, George R. Stetson.

MR. CHESTER W. BUTTERWORTH, formerly connected with the Rockford (Ills.) Company, which plant was founded by his late father (Mr. Thomas Butterworth) in the early 50's, took charge as Manager of the Freeport (Ills.) plant early this month.

MR. H. B. MARTELL, formerly connected with the Spokane (Wash.) Gas Light Company, has been appointed Manager of the new business department of the new plant at Billings, Mont. The buildings are completed and the work of installing the machinery will be completed by the 1st prox.

YES; he is back from his trip to far Carthay, India, Java, Japan, and elsewhere, looking better and acting spryer than ever. And he always was good looking and speedy. The scores who saw him and shook him (by the hands) during the Canadian-Michigan meeting can attest to the absolute veracity of the foregoing statements. Of course, this screed could refer only to Mr. James T. Lynn, of Detroit —otherwise "Our Jim!"

"THREE-QUARTERS million dollars for reflector patents!" How's that for an inventor's reward? Which ejaculation and question are chargeable to the following from the New York *Sun* of the 8th inst.: "A suit involving the rights and patents for the Holophane system of illuminating, for which it is alleged $750,000 was paid to Otis Angelo Mygatt, of the St. Regis Hotel, has been filed. The plaintiff is the Holophane, Limited, a corporation organized in England (1908) to buy out all the rights to the aforesaid system. The organizers were Lord Ernest Wm. Hamilton, Lieut.-Col. F. John Paul, Francis Butler, G. Carr Glyn, D. S. O., 'and others.' The plaintiff concern was incorporated for $1,000,000, and stock was offered to the public at $5 per share. The plaintiff alleges that the public bought stock worth $74,750, but that after the Company had paid $750,000 to Mygatt for his rights, he refused to transfer them. The complaint asks that he be compelled to do so, and that, because he is heavily indebted, be restrained from disposing of the rights to anyone else. The Holophane Glass Company, an American subsidiary of the British corporation, also sued Mygatt for $46,590, as the cost of the house at 36 West 39th street, which, it is alleged Mygatt bought for his own purposes and transferred to the plaintiff against the latter's wishes." The building noted was the publishing office of "The Illuminating Engineer," later on serving as a branch office of the Holophane and General Electric Company.

MR. A. COLQUIT TURNER, of Rome, Ga., has been appointed General Manager of the Athens (Ga.) Company. That corporation is now in strong hands, and its proprietors are proposing to put the plants (both manufacturing and distributing) in a condition suitable to meet the demands for gas for lighting and fuel purposes that are being made dy the residents of this live community. As an earnest of their intention they have relocated the Company's business headquarters in a suitable structure on Jackson street, between Washington and Clayton streets, which location is close to the business heart of the city.

MR. A. T. RAND, President of the Minneapolis (Minn.) Gas Light Company, is back from a trip which virtually carried him around the world. That he did it leisurely and systematically may well be imagined when he started January 5th and returned late last month. The correspondent who forwards this note closes by saying: "He looks well, and his looks do not belie his actual physical condition, which is of the best. Naturally enough he is happy over being at home again; and assuredly we are glad that he is again with us."

CONSTRUCTION men may do well to note that the Northwestern Coal Distillation and Power Company, of Mandan, N. D., has been granted a franchise to operate a gas works in Mandan, the life of the grant having been placed at 30 years.

The Market for Gas Securities.

The bears had an inning last week, and they seemingly can accomplish as much in 6 days as the bulls can do in longer length of time. The slump in Consolidated amounted to 2¼ in the bid. Quotations came in this morning at 143¼ to 144. The seeming reason for the decline is the increase in volume of business being done by the Company; at least that must be the inference, since the Company reports constantly increasing output, as to both its divisions of trading.

The decline in Brooklyn Union was less than a point. The figures in it to-day (Friday) are: 146½ to 149. U. G. I. Company's shares are again in the ascending scale, having crossed 180 within the week. The rumor is again current that the Company and the Philadelphia Electric are courting anew. In any event, its regular quarterly dividend of 2 per cent. is declared, and made payable the 15th prox. The outside market is steady.

Gas Stocks.

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

115 BROADWAY, NEW YORK CITY.

SEPTEMBER 16.

☞ All communications will receive particular attention.

☞ The following quotations are based on the par value of $100 per share:

N. Y. City Companies.	*Capital.*	*Par.*	*Bid.*	*Asked*
Consolidated Gas Co.	$78,177,000	100	143¾	144
Central Union Gas Co.—				
1st 5's, due 1972, J. & J.	8,000,000	1,000	108	105
Equitable Gas Light Co.—				
Con. 5's, due 1932, M. & S.	1,000,000	1,000	105	106
Mutual Gas Co.	3,600,000	100	182	187
New Amsterdam Gas Co.—				
1st Con. 5's, due 1948, J. & J.	11,000,000	1,000	101	102½
New York & Richmond Gas Co. (Staten Island)	1,500,000	100	35	50
1st Mtg. Gold Bds. 5 p. ct.	1,500,000	—	98½	100½
New York and East River—				
1st 5's, due 1944, J. & J.	3,500,000	1,000	108	105
Con. 5's, due 1945, J. & J.	1,500,000	—	96	100
Northern Union—				
1st 5's, due 1927, J. & J.	1,250,000	1,000	99½	101
Standard	5,000,000	100	60	70
Preferred	5,000,000	100	90	100
1st Mtg. 5's, due 1930, M. & N.	1,500,000	1,000	103	105
The Brooklyn Union	15,000,000	1,000	146½	149
1st Con. 5's, due 1948, M. & N.	15,000,000	—	105¾	107
Yonkers	200,000	500	180	—
Out-of-Town Companies.				
Bay State	50,000,000	50	7-16	½
" Income Bonds	2,000,000	1,000	—	75
Binghampton Gas Works	450,000	100	—	—
" 1st Mtg. 5's	500,000	1,000	97	100
Boston United Gas Co.—				
1st Series S. F. Trust	7,000,000	1,000	82	85
2d " " "	3,000,000	1,000	47½	50
Buffalo City Gas Co.	5,500,000	100	5	8
Bonds, 5's	5,250,000	1,000	59	60
Capital, Sacramento	500,000	50	—	35
Bonds (6's)	150,000	1,000	—	—
Chicago Gas Co. Guaranteed Gold Bonds	7,660,000	1,000	104	106¼
Cincinnati Gas and Electric Co.	29,500,000	100	87	90
Columbus (O.) Gas Co., 1st Mortgage Bonds	1,500,000	1,000	96	98
Columbus (O.) Gas Lt. & Heating Co.	1,682,750	100	90¼	91
Preferred	3,026,500	100	75½	80
Consumers, Toronto	2,000,000	50	200	204
Consolidated, Baltimore	13,460,084	—		—
Mortgages, 5's	3,400,000	—		—
General Mortgage 4½	10,661,000	—		—
Con. Gas Co., Baltimore City, 4½	2,751,000	—		—
Consolidated Gas Co. of N. J.	1,000,000	100	15	—
Con. Mtg. 5's	976,000	1,000	94	96
Bonds	75,000	—	—	100
Detroit City Gas Co.	6,580,000	—	—	50
Detroit Gas Co., 5's	881,000	1,000	75	80
" Prior Lien 5's	5,619,000	1,000	97	100¼
Equitable Gas & Fuel Co., Chicago, Bonds	2,000,000	1,000	—	101
Essex and Hudson Gas Co.	6,500,000	—	133	136
Fort Wayne	2,000,000	—	—	—
" Bonds	2,000,000	—	55	—
Grand Rapids Gas Light Co., 1st Mtg. 5's	1,350,000	1,000	100	101
Hartford	750,000	25	190	200
Hudson County Gas Co., of New Jersey	10,500,000	—	130	133
" Bonds, 5's	10,500,000	—	104	106
Indianapolis	2,000,000	—	38	45
" Bonds, 5's	2,650,000	—	104½	105
Jackson Gas Co.	250,000	50	82	—
" 1st Mtg. 5's	290,000	1,000	91	95
Kansas City Gas Light Co., of Missouri	5,000,000	100	—	86
Bonds, 1st 5's	3,822,000	1,000	98½	99
Laclede Gas Co., St. Louis.	10,000,000	100	105½	106
Preferred	2,500,000	100	90	100
Bonds	10,000,000	1,000	102½	103
Lafayette Gas Co., Ind.	1,000,000	100	—	60
Bonds	1,000,000	1,000	60	65
Louisville	2,370,000	50	120	120
Madison Gas and Electric Co.				
" 1st Mtg. 6's	400,000	1,000	106	
Massachusetts Gas Companies, of Boston	25,000,000	100	88¼	89¼
Preferred	25,000,000	100	96¼	96½
Montreal Gas Co., Canada	2,000,000	100	233	236
Nashville Gas Light Co.	1,000,000	100	110	—
Newark, N. J., Con. Gas Co.	6,000,000	—	97	98
Bonds, 6's	6,000,000	—	127	128
New Haven Gas Co.	5,000,000	25	182	190
Peoples Gas Lt. & Coke Co., Chicago	25,000,000	100	116	116½
1st Mortgage	20,100,000	1,000	102	102½
2d "	2,500,000	1,000	104	—
Rochester Gas & Electric Co.	2,150,000	50	88	—
Preferred	2,150,000	50	118	—
Consolidated 5's	2,000,000	—	104¾	105½
Pacific Gas and Electric Co.	15,500,000	—	64	65
St. Joseph Gas Co.—				
1st Mtg. 5's	1,000,000	1,000	94	98
St. Paul Gas Light Co.	2,500,000	100	—	—
1st Mortgages, 6's	650,000	1,000	104	105
Extension, 6's	600,000	1,000	112½	115
General Mortgage, 5's	3,447,000	1,000	94	96
Syracuse Gas Co., N. Y.	1,975,000	100	50	55
Bonds	2,047,000	1,000	101	103
Washington (D. C.) Gas Co.	1,600,000	200	420	425
1st Mortgage, 6's	600,000	—	—	—
Western Gas Co., Milwaukee	4,000,000	—	—	—
Wilmington (Del.) Gas Co.	600,000	50	—	—

MEETING TIMES OF THE VARIOUS GAS ASSOCIATIONS.

American Gas Institute.—Annual meeting, October 16 to 18, 1912. Marlborough-Blenheim Hotel, Atlantic City, N. J. Officers: President, Ira C. Copley, Aurora, Ills. Secretary, Geo. G. Ramsdell, 29 West 39th st., N. Y. City.

Canadian Gas Association.—Annual meeting and Gas Show, Toronto, Aug. 26th to Sept. 7, 1912. Officers: President, Arthur Hewitt, Toronto, Ont.; Secretary and Treasurer, John Keillor, Hamilton, Ont.

Empire State Gas and Electric Association.—Annual meeting, New York City, Oct. 9, 1912. Officers: President, R. M. Searle, Rochester, N. Y.; Secretary, C. H. B. Chapin, 29 W. 39th street. New York City.

Gas Meters.—Monthly meetings. Chairman, Will W. Barnes; Commissioners, W. H. Pettes, I. W. Peffy; Secretary, H. Thurston Owens, 42 Pine street, New York City.

Guild of Gas Managers of New England.—Annual meeting, March, 1913. Young's Hotel, Boston; monthly meeting, second Saturday. Officers: President, Walter G. Africa, Manchester, N. H.; Secretary, H. K. Morrison, Brockton, Mass.

Illinois Gas Association.—Annual meeting, March 19th and 20th, 1913. Chicago, Ills. Officers: President, H. O. Channon, Quincy, Ills.; Secretary-Treasurer, Horace H. Clark, 115 No. Oak Park avenue, Oak Park, Ills.

Illuminating Engineering Society.—Annual meeting, Niagara Falls, Canada, Sept. 16-19, 1912. Meetings of Sections, monthly. Pres't, V. R. Lansingh, New York City; Secretary, Preston S. Millar, 29 W. 39th street, N. Y. City. Sections: New York, Secretary, C. L. Law, 124 West 42d street. New England, Secretary, H. C. Jones, 10 High street, Boston, Mass. Philadelphia, Secretary, L. B. Eichengreen, Broad and Arch streets. Chicago, Secretary, J. B. Jackson, 28 North Market street. Pittsburgh, Secretary, J. C. Mundo, Oliver Building.

Indiana Gas Association.—Annual meeting, March, 1913, Indianapolis. Officers: President, Howard L. Olds, Indianapolis; Vice-President, Wm. Wallace, Lafayette; Secretary-Treasurer, Philmer Eves, Indianapolis.

Iowa District Gas Association.—Annual meeting, Burlington, Ia., May 22, 23, 24, 1913; Officers: President, C. W. Fair, Atlantic, Ia.; Secretary, G. I. Vincent, Des Moines, Ia.

Kansas Gas, Water and Electric Light Association.—Annual meeting, October 17-19. Manhattan, Kas. Officers: President, B. F. Eyer, Manhattan, Kas.; Secretary and Treasurer, J. D. Nicholson, Newton, Kas.

Michigan Gas Association.—Annual meeting, September 4-6, 1912; Toronto, Canada. Officers: President, F. W. Blowers, Kalamazoo, Mich; Secretary-Treasurer, Glenn R. Chamberlain, Grand Rapids, Mich.

Missouri Electric Light, Gas, Water Works and Street Railway Association.—Annual meeting, April, 1913; Joplin, Mo. Officers: President, P. A. Bertrand, Joplin, Mo.; Secretary and Treasurer, P. W. Markham, Brookfield, Mo.

National Commercial Gas Association.—Annual meeting and Gas Show, Dec. 2-5, 1912. Atlanta, Ga. Officers: President, C. L. Holman, St. Louis, Mo.; Secretary, Louis Stotz, 29 West 39th street, New York City.

Natural Gas Association.—Annual meeting, Cleveland, O., May, 1913; Officers: President, M. B. Daly, Cleveland, O; Secretary, T. C. Jones, Delaware, O.

New England Gas Association.—Annual meeting, February,———1913. Boston. Officers: President, D. D. Barnum, Worcester, Mass.; Secretary-Treasurer, N. W. Gifford, East Boston, Mass.

New Jersey State Gas Association.—Fall Meeting, Sept. 21, Atlantic City, N. J.—President, William H. Pettes, Newark, N. J.; Secretary-Treasurer, Arthur H. Osborn Belmar, N. J.

Ohio Gas Association.—Annual meeting, February ———, 1913, Columbus, O.; President, John M. Garard, Columbus, O.; Secretary, L. B. Denning, Columbus, O.

Oklahoma Gas, Electric and Railway Association.—Annual meeting, May, 1913. President, Noel R. Gascho, Alva, Okla.; Secretary, H. V. Bozell, Norman, Okla.

Pacific Coast Gas Association.—Annual meeting, San Diego, Cal., September 17, 18, 19, 1912. Officers: President, W. Baurhyte, Los Angeles, Cal.; Vice-President, Henry E. Adams, Stockton, Cal.; Secretary-Treasurer, John A. Britton, 445 Sutter street, San Francisco, Cal.

Pennsylvania Gas Association.—Annual meeting, York, Pa., April, 1913; Officers, President, H. H. Ganser, Norristown, Pa.; Secretary-Treasurer, W. O. Lamson, Jr., West Chester, Pa.

Society of Gas Lighting.—Annual meeting Dec., 13, 1912; monthly meetings, second Thursday. Place, New York City. Officers: President, Fred. S. Benson; Secretary, George G. Ramsdell, 29 West 39th street, New York city

Southern Gas Association.—Annual meeting,———— 1913,———— Officers: President, C. E. White, Montgomery, Ala.; Secretary-Treasurer, E. D. Brewer, Atlanta, Ga.

Southwestern Electrical and Gas Association.—Annual meeting. April————1913, Galveston, Tex. Officers: President, F. M. Lege, Jr., Galveston, Tex.; Secretary, H. S. Cooper, 405 Slaughter Bldg., Dallas, Tex.

Wisconsin Gas Association.—Annual meeting, May ——— 1913, Milwaukee, Wis. Officers: President, I. F. Wortendyke, Janesville, Wis.; Secretary-Treasurer, Henry Harmon, Milwaukee, Wis.